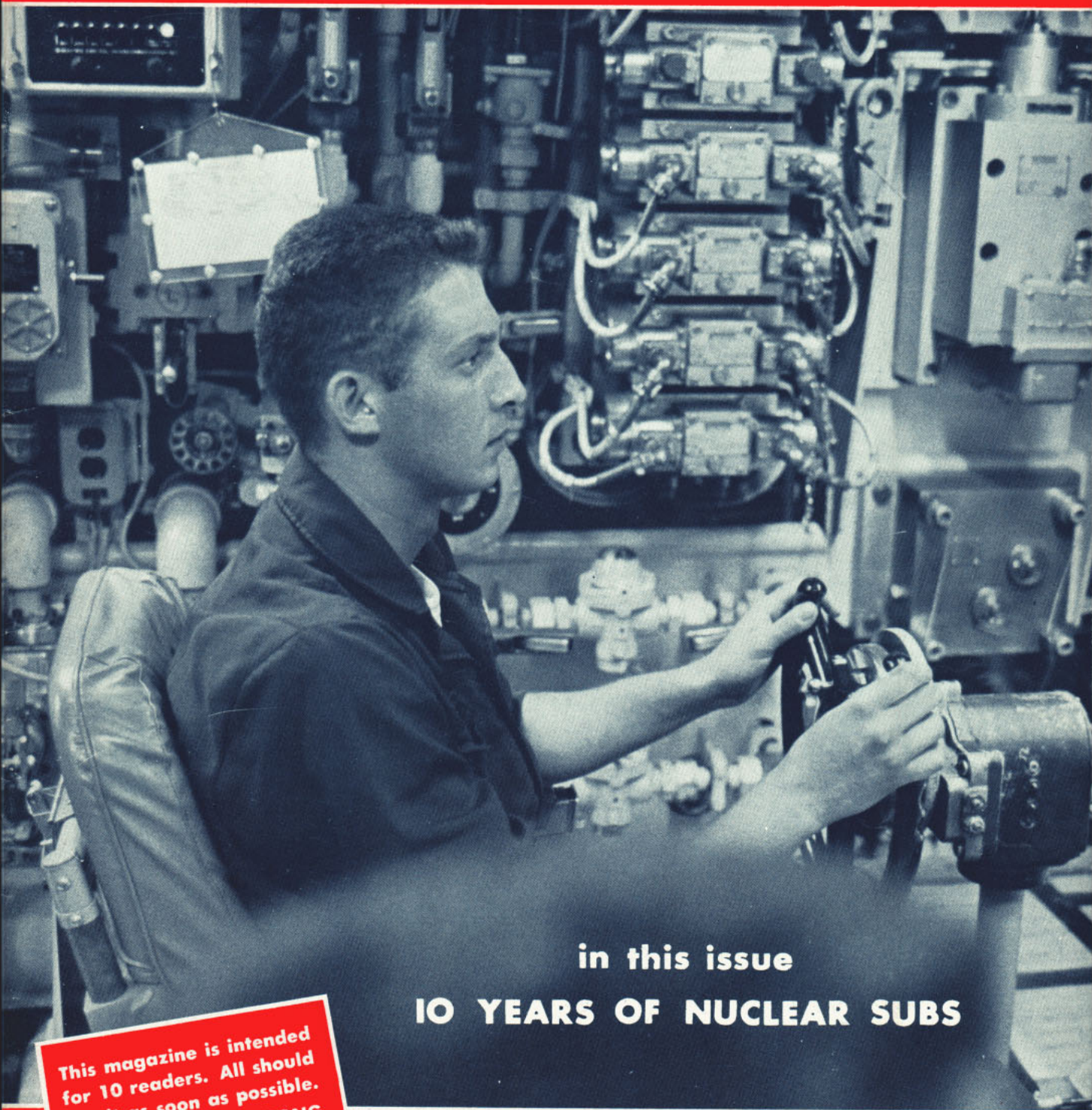


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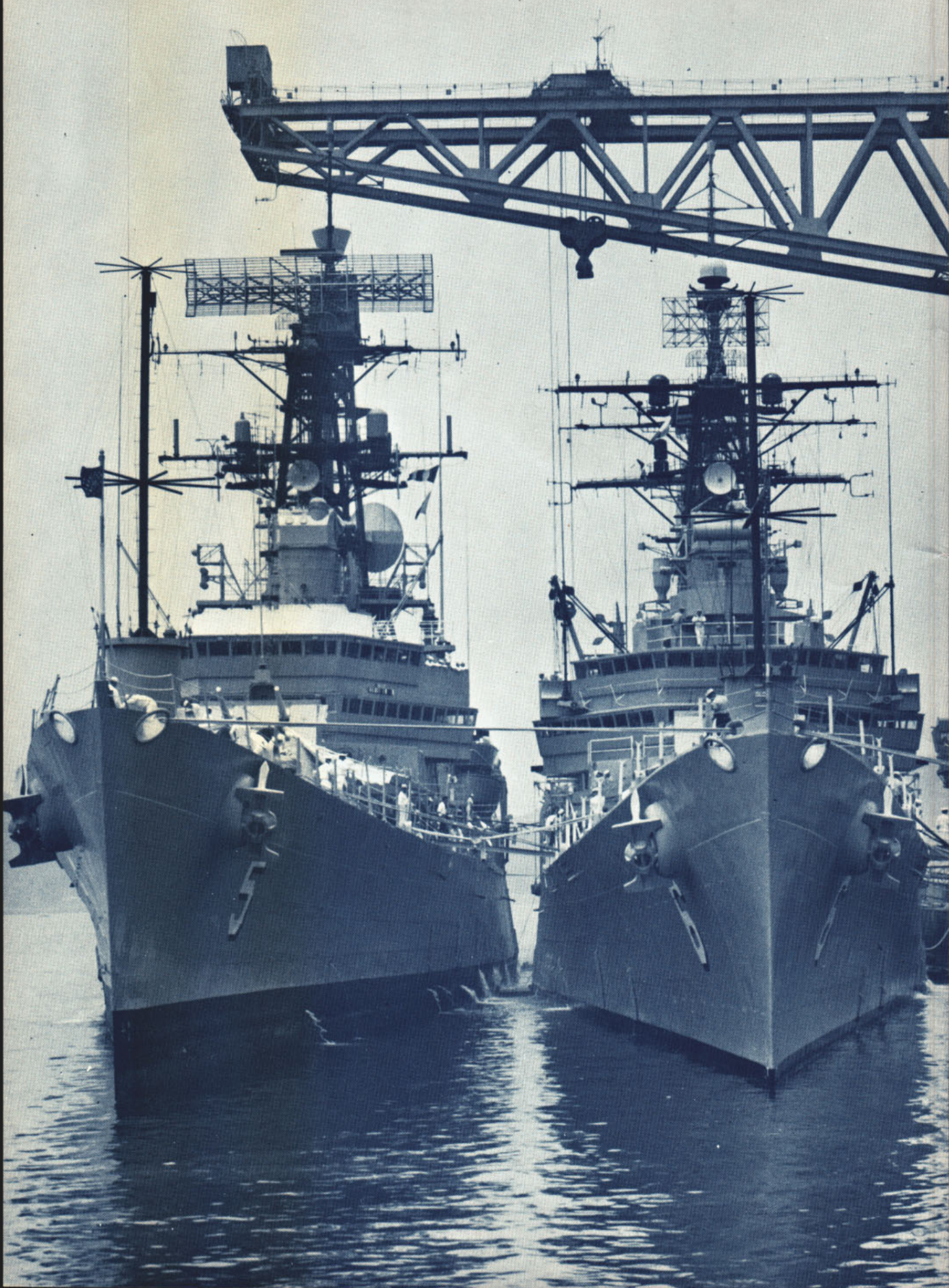
THE BUREAU OF NAVAL PERSONNEL CAREER PUBLICATION



in this issue
10 YEARS OF NUCLEAR SUBS

This magazine is intended
for 10 readers. All should
see it as soon as possible.
PASS THIS COPY ALONG

OCTOBER 1964





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ALL HANDS

THE BUREAU OF NAVAL PERSONNEL CAREER PUBLICATION

OCTOBER 1964

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NUMBER 573

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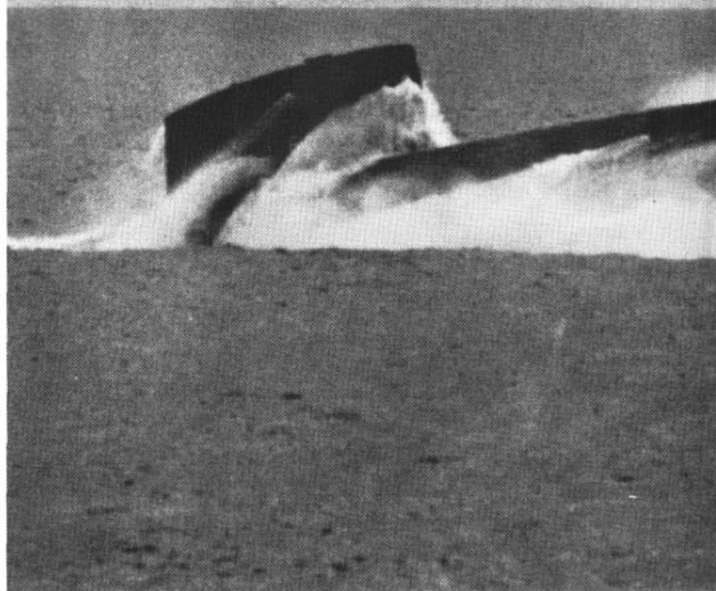
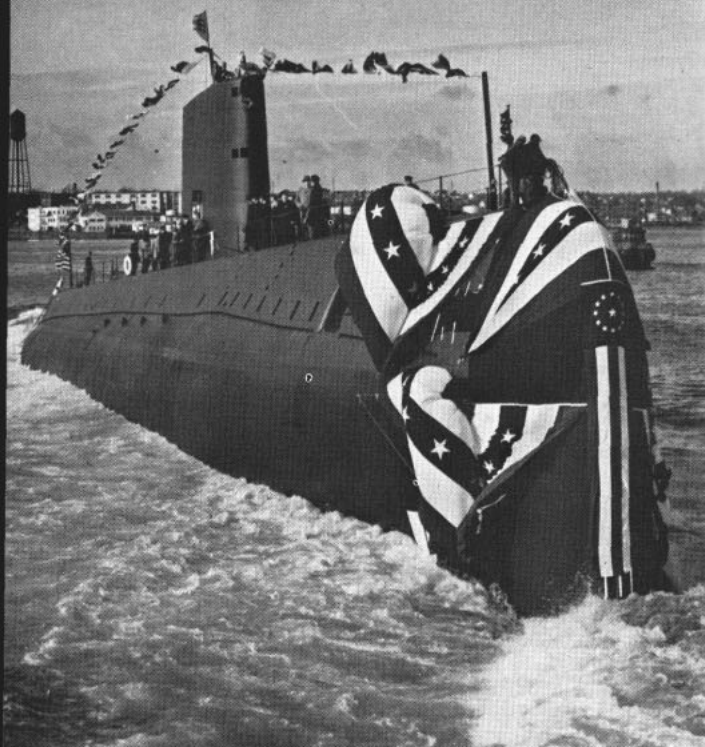
Don Addor, Layout & Art

French Crawford Smith, Reserve

• **FRONT COVER:** SOMEWHERE BELOW—Crew member of the fleet ballistic missile submarine USS Lafayette (SSBN 616) keeps a watchful eye and a steady hand as he mans his station while on patrol in the deeps of the Atlantic.

• **INSIDE FRONT:** SIDE BY SIDE: USS Oklahoma City (CLG 5) moors by Providence (CLG 6) at Yokosuka, Japan, as Oklahoma City, fresh from overhaul, readies to relieve Providence as flagship of the Seventh Fleet. CLG 6 returns to the States after stops at Australia and Pearl.

• **CREDIT:** All photographs published in ALL HANDS Magazine are official Department of Defense photos unless otherwise designated.



FIRST IN—USS *Nautilus* (SSN 571) was the first true submarine. Rt: *Polaris*-armed USS *Nathan Hale* surfaces.

Nuclear Subs: The First

WHEN NUCLEAR power became a reality, another beachhead was established in the strange war the submarine service has fought since its beginning—the war of technology. At the start of this war the main objective of the submariner's battle was to make his ship work at all. Since then, the problem has always been how to improve the ship. A solution to this problem is nuclear power.

Nuclear powered submarines have revolutionized naval warfare.

These remarkable vessels can remain submerged for months, completely independent of our atmosphere. They can travel for years without refueling. They can go where no other vessels can go. They can hide, run fast and attack viciously—from close in or from 1500 and, soon, 2500 miles out.

Most of us are by now familiar with these highly publicized capabilities and, unbelievable as they seem, accept them as SOP. Less known are some sidelights on how the nuclear sub came into existence 10 years ago, and what this means to the Navy.

For centuries, since Alexander the Great, men sought to develop a submersible war vessel which could operate stealthily, unseen and unheard, to make surprise attacks.

Of the many Americans whose contributions helped transform this idea through its developmental stage and into the modern nuclear powered submarine, the names of David Bushnell, Robert Fulton, Simon Lake, John P. Holland and, most recently, Vice Admiral Hyman G. Rickover are prominent on the submarine roster.

Britain's Royal Navy was the world's most powerful in 1805, when a zealous Robert Fulton demonstrated his submarine's potential and offered it to the British. They refused—but not because the Admiralty was blind to the possibilities such a vessel offered for the waging of naval warfare.

They refused because Britain did not want to aid the development of submarines for fear that, if they were successful, other nations would build them and thereby gain a means with which to attack the mighty British Fleet.

THIS PRESENTIMENT was well justified, as history testifies. But even before Fulton's demonstration, in which he sank a target brig with his submarine *Nautilus*, the British had received a practical demonstration in submarine warfare.

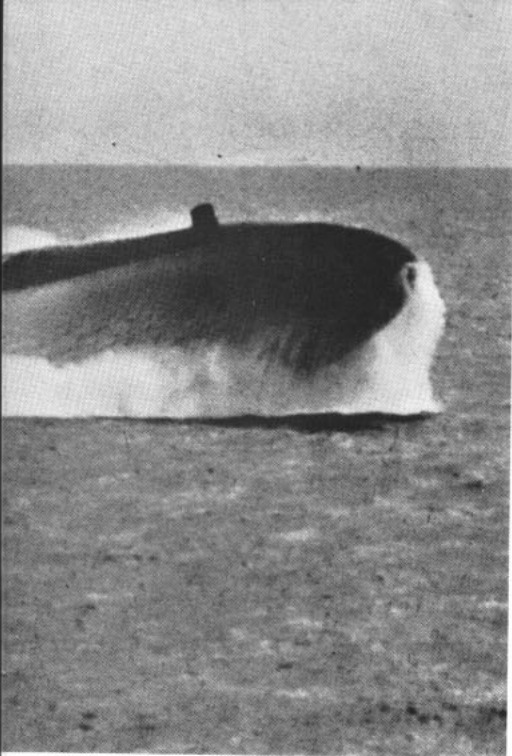
David Bushnell, a Connecticut Yankee who made the first American

submarine, sent his egg-shaped vessel *Turtle* to attack British ships blockading New York harbor during the Revolutionary War. Rudimentary as it was, *Turtle* could deal destruction. A one-man crew, hand-operating the propellers, could drive the vessel on a submerged approach, screw a time bomb into the wooden hull of an enemy ship, then retreat.

Unfortunately for Bushnell, *Turtle's* first choice for victim was HMS *Eagle*, which happened to have a copper hull. Though unable to plant its charge, *Turtle* startled the British sufficiently, and giving this weird submarine its due respect, they moved their blockading force further to sea.

Bushnell's one-man contraption went to battle unassisted, against a greatly superior force. Even in its failure it proved that a submersible warship would be most valuable. A powerful naval force without the means of counteracting such an attack would find itself at a great disadvantage against an adversary that had a lead in submarine development.

SO IT WAS, later in history, that a much inferior naval force—the Confederate States of America—was responsible for the first sinking of a warship by a submarine.



USS Hale shows off her atomic power.

Decade

Several unsuccessful attempts to develop a reliable submarine had been made by others (besides Fulton and Bushnell) before Confederate inventor H. L. Hunley set his mind to developing a submarine capable of making surprise torpedo attacks on Union warships blockading the South. His end result was the submarine *css Hunley*—a reworked cylindrical boiler 48 inches in diameter, 35 feet long. The propeller shaft was turned by an eight-man crew.

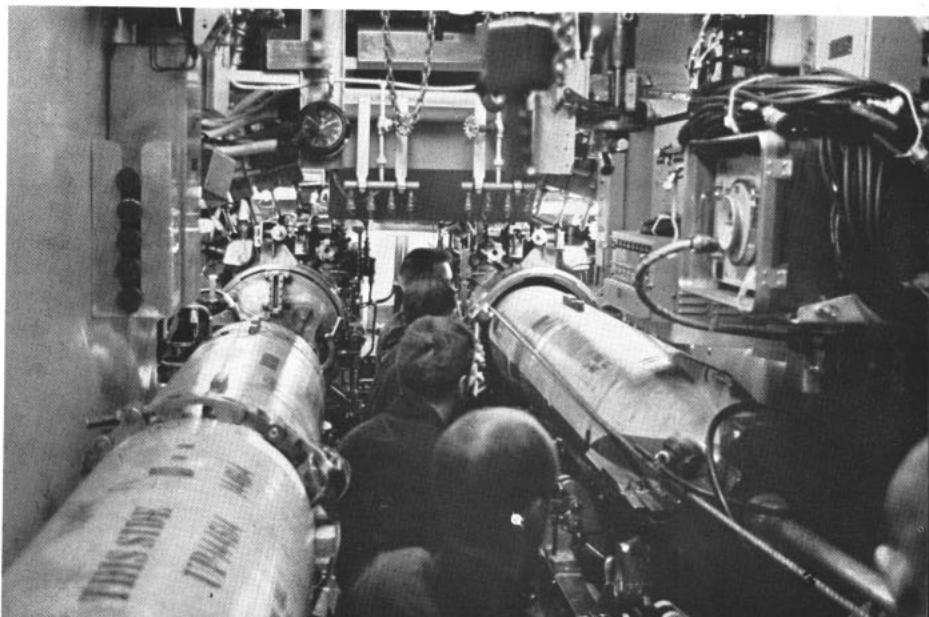
Hunley took 35 crewmen's lives on five unsuccessful trial runs, but it was eventually considered ready for action and was armed with a bomb mounted on a 22-foot spar. On 17 Feb 1864 the aggressive *Hunley* labored toward the steam sloop *uss Housatonic* in Charleston harbor, appearing to the unfamiliar eye as a huge slab of floating driftwood.

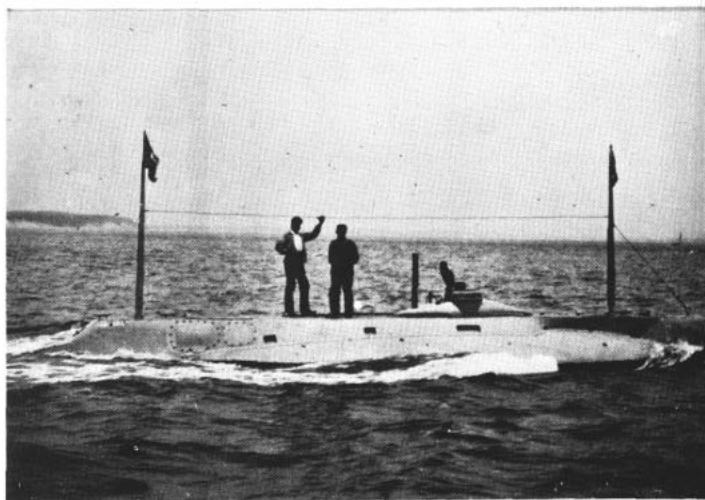
Housatonic's watch officer spotted the approaching danger and sounded the alarm—but too late. *Hunley's* bomb hit home, so successfully, in fact, that the explosion sent both vessels to the bottom.

As we know, submarines have come a long way since that era. To get an idea how far, it is necessary only to compare two submarines named *Nautilus*. About 160 years ago there was Fulton's sail-rigged, hand-cranked craft. Ten years ago



WATER WINGS—Nuclear-powered *USS Dace* (SSN 607) cruises on surface. Below: Crew members man stations aboard *USS Lafayette* (SSBN 616).





SOME DIFFERENCE—WW II electric-diesel subs, like *USS Flasher*, sank many ships. Rt: *USS Holland* on cruise in 1900.

the sleek, nuclear-powered SSN 571 slid down the building ways at Groton, Conn.

SSN 571 was, on her commissioning date, the latest development in a line of U. S. Navy submarines which ran back over 50 years to the 53-foot *Holland*, the Navy's first. In contrast to Fulton's *Nautilus*, which could make a submerged run of 50 yards in seven minutes and remain submerged at 25 feet for one hour, SSN 571 can sail around the world submerged, sustaining speeds greater than 20 knots and depths greater than 300 feet (the speed and depth capabilities of U. S. nuclear-powered submarines are classified).

BUT THE comparison can be updated considerably. Nuclear-powered subs represent a drastic improvement even over submarines relied upon for combat strength as recently as World War II.

Before *Nautilus* got underway on nuclear power no navy had ever possessed a true submarine. Submersible ships, yes—submarines, no. To be a true submarine a vessel must be capable of operating underwater for prolonged periods, completely self-sustaining in its underwater environment. To date the "nukes" are the only submarine vessels which possess this capability.

Conventional subs are powered by diesel engines on the surface, or by large electric storage batteries while underwater. They are strictly limited to the endurance of their batteries when submerged, the time measured in hours rather than months.

It is possible to run the diesel engines underwater, using a snorkel to pipe down air from the surface. But this restricts the sub to snorkel

depth, increases the possibility of the submarine being sighted, and creates quite a noise, which can be picked up by underwater listening devices more easily than the comparatively quiet electric motors.

The conventional sub's dependence on the earth's atmosphere, therefore, limits its capabilities.

The Navy's search for an answer to these shortcomings started before World War II. In fact, the First World War had already shown that submarines could play a major role in any nation's efforts to control the seas. To make the most of this role, a more effective submarine with greater underwater endurance was needed.

Research in the field of advanced power plants began in the 1930s at the Naval Research Laboratory. Chemical-burning plants were considered, but these, like the diesel, would require oxygen for combustion.

CONSIDERATION was also given to the use of atomic power. Scientists were aware that large amounts of nuclear energy were released in space. The problem was to find a suitable method for releasing and controlling this energy—after finding a source available on earth. If this could be done, a radically new power plant would be in the making.

The breakthrough came in 1938, when German researchers produced nuclear fission by bombarding uranium atoms with neutrons. This served to split the uranium atoms and, in the process, a tremendous amount of energy was released.

The significance of this discovery lay in the fact that energy, in the

form of heat, was being produced without combustion—the process did not require oxygen. Scientists calculated that if large numbers of uranium atoms were split in a short period of time, the amount of energy released would be far greater than could be obtained from any other known source of energy.

Then came the problem of harnessing this nuclear energy and converting it to power.

Dedicated to the proposition that this problem could be solved Vice Admiral (then Captain) Rickover headed a government-industry team that developed nuclear energy for ship propulsion. For his services as Chief of the Naval Reactors Branch, Division of Reactor Development, U. S. Atomic Energy Commission, and as Director of the Nuclear Power Division, BuShips, from March 1949 to July 1952, VADM Rickover was awarded his second Legion of Merit. His citation reads, in part, "Displaying exceptional talents in the field of mobile power reactors and exercising unceasing drive and energy, Captain Rickover, more than any other individual, is responsible for the rapid development of the nuclear ship program." For his continuing role in this field, VADM Rickover has also received two Distinguished Service Medals, the highest peacetime award given by our government.

In this new development nuclear energy is used to heat a primary coolant (pressurized water) which is piped through the reactor compartment to a steam generator. In the steam generator the primary coolant transfers the heat to water in a secondary system to develop steam, which then drives the submarine's twin turbines.

PROTOTYPES of these revolutionary power plants were built and installed in land-based submarine hulls. Next came the ships themselves.

Congress appropriated funds for construction of the first atomic submarine on 1 Jul 1951 and the Navy let a contract the following month. The keel of what was to become the record-shattering *USS Nautilus* (SSN 571) was laid the following June.

While *Nautilus* was abuilding, extensive tests were being performed on the prototype reactor power plants. Long before *Nautilus* went to sea for the first time, one of the land-based, atom-propelled "submarines" was steaming at full power in the Idaho desert.

On 10 Mar 1953 the plant "went critical"—that is, a self-contained, controlled nuclear chain reaction took place within the reactor. On 25 June that year the reactor reached full power, and a simulated Atlantic crossing began.

Navy crewmen assigned to the prototype stood regular four-hour watches, and a great circle route from Nova Scotia to Ireland was plotted. Four days later the land-locked "ship" had crossed the Atlantic, traveling a simulated distance of over 2000 miles at unprecedented speed. The prospects for realizing

success with the nuclear-powered submarine concept mushroomed.

Creature comforts were as important a consideration as propulsion for a submarine designed to stay submerged for any length of time, so *Nautilus* was meanwhile receiving some choice items from BuShip's "habitability package shop." The new sub was to be new in every way, and one of the most appreciable changes was in size. *Nautilus* grew to have about twice as much living space as conventional subs, and even had a staircase installed—another submarine first. Fiber glass bunks with sponge rubber mattresses were added to the luxury and there was, of all things, a juke box. Things were really looking up. Soft colors brightened the decor.

CREW MEN aboard *Nautilus* were also to be something special—combination submariners and physicists. All volunteers selected for the crew, regardless of rate, were ordered to duty at the Bettis Plant of the Atomic Energy Commission. Their training included instruction in the theory, design, construction and operation of nuclear submarine propulsion machinery. Theoretical subjects such as college algebra, physics and analytical geometry provided the basis for understand-

ing the complex systems and equipment involved.

Practical courses in circuits, hydraulic test loops and stainless steel welding were included, as were courses in blueprint reading, metallurgy and reactor engineering.

Then, having been dry-land sailors for nearly three years, they headed for the Submarine Base, New London, and a refresher course in submarine seamanship. Even CDR (now Rear Admiral) Eugene P. Wilkinson, usn, the designated skipper of the first A-sub, took the training.

On 21 Jan 1954 Mrs. Dwight D. Eisenhower smashed the traditional bottle of champagne against the bow of *Nautilus*. The commissioning ceremonies were held eight months later, on 30 September. *Nautilus'* nuclear power plant was first operated on 30 December, and full power was developed in dockside tests four days later.

On 17 Jan 1955 the ship left the builder's piers for initial sea trials, signaling its famous message "Under way on nuclear power" as it headed out to sea. After an extended series of tests and trials, the 324-foot *Nautilus* was accepted by the Navy for unrestricted service on 22 Apr 1955.

AS AN OPERATING unit of the Fleet, *Nautilus* soon rewrote the sub-

BIG 'BULLET'—Sub tender *USS Proteus* (AS 19) loads *Polaris* aboard *USS Patrick Henry* (SSBN 599) in Holy Loch.



marine record book. In May 1955 the ship steamed from New London to San Juan, P. R., completely submerged, traveling 1381 miles in 89.8 hours and maintaining an average speed of 16 knots. This was the greatest distance ever traveled completely submerged by a submarine, the longest period ever completely submerged, and the fastest speed ever maintained for such a distance.

Two years went by and *Nautilus* steamed 62,556 miles (over the 20,000 leagues of Jules Verne's fictional *Nautilus*). To cover the same distance, a conventional submarine would require 2,170,000 gallons of diesel oil—enough to fill 217 railroad tank cars, which would form a train two miles long.

Shortly after refueling for the first time, *Nautilus* made a trip to the west coast of the U. S., via the Panama Canal, to acquaint Pacific Fleet forces with her remarkable capabilities. In Seattle the ship's first CO, CAPT Wilkinson, was relieved by CDR William R. Anderson, USN.

CDR Anderson immediately began making plans for an Arctic trip. But his first orders were to take *Nautilus* back to New London. During the two-month cruise from New London and back *Nautilus* steamed 17,213 miles, 14,900 of them submerged. All travel between New London and San Diego and return, except for Panama Canal transits, was submerged. The ship was establishing unbelievable records, but the biggest were yet to come.

In October 1957, *Nautilus* reached latitude 87 North—180 miles from the North Pole, and further North than any previous ship had gone.



HIGHEST PEACETIME AWARD—VADM H.G. Rickover receives DSM from SecNav W. B. Franke in 1961 for role in nuclear ship development.

She steamed 1383 miles under the polar ice cap on three trips lasting a total of five and one-half days. On her way to the Arctic *Nautilus* completed a dive of 287 hours, covering 4039 miles.

THIS POLAR TRIP WAS of great scientific importance. In the area in which she operated *Nautilus* gathered more data on ice characteristics and water depths than had ever been obtained before.

On 26 Apr 1958 *Nautilus* again departed New London for the Pacific. She visited ports on the West Coast and operated with Pacific Fleet units near Hawaii.

On 23 July the A-sub departed Honolulu and, after a rapid submerged voyage through the Bering Strait, went under the ice off Point Barrow, Alaska. She proceeded due North to become, on 3 August, the

first ship in history to reach the North Pole. Following this historic achievement, *Nautilus* proceeded under the ice pack and emerged in the open waters of the Greenland Sea west of Spitsbergen, and continued south into the Atlantic to become the first ship to make the Northwest Passage via the Polar route. The world cheered this historic accomplishment.

WHILE *Nautilus* and, later, her sister ship *Seawolf*, took nuclear power to sea for the first time and proved its tremendous capabilities, new muscles were under construction for the submarine service.

The next four atomic subs—of the *Skate* class—marked the end of the "experimental" phase of nuclear-powered submarines.

The first of this new class, *uss Skate* (SSN 578) was not long in establishing herself as a worthy member of the SSN force. On 4 Mar 1958 she completed the fastest submarine transatlantic crossing on record from the U. S. to England, traveling 3161 miles in 203 hours.

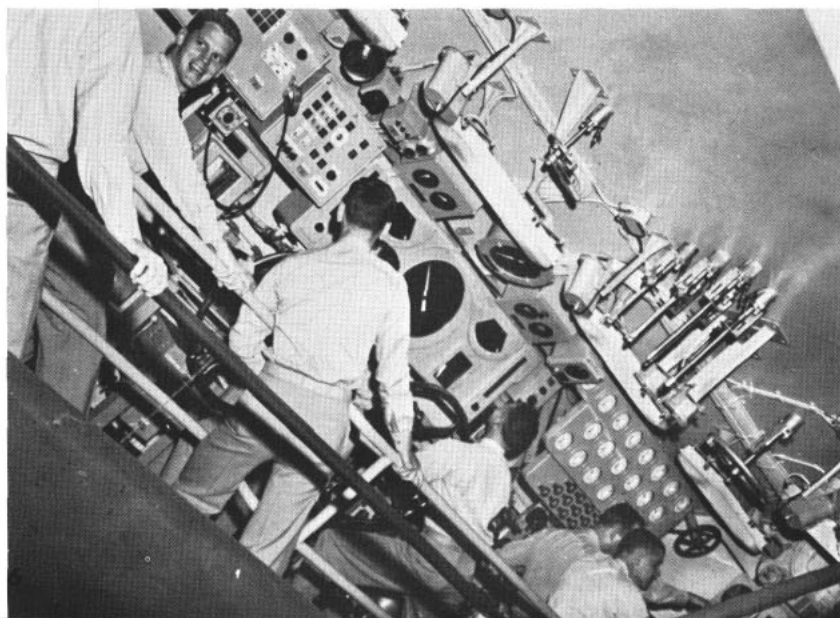
Later that year *uss Seawolf* (SSN 575) surfaced after 60 days underwater without contact with the earth's atmosphere, during which time she logged over 13,700 miles.

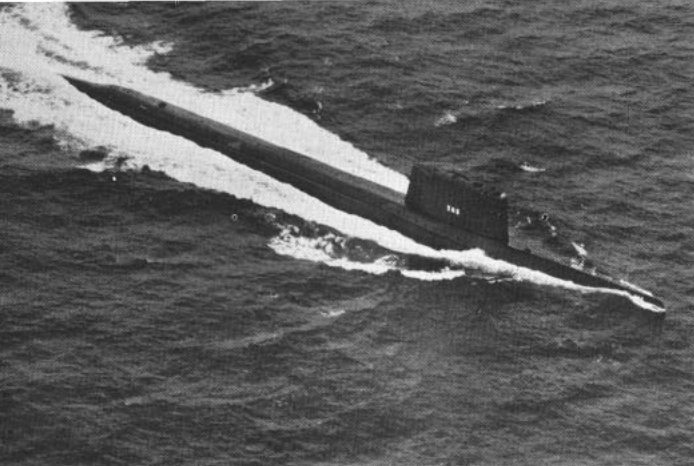
The evolution of the nuclear submarine continued with the construction of attack subs for the Fleet, of which there are now three classes. All are nuclear-powered. Nuclear subs have since filled the record books with such incredible feats as steaming around the world submerged and rendezvousing and surfacing at the North Pole. They have easily fulfilled their initial theoretical potential.

With them came another major innovation, this time in the hull design of submarines. The *Skipjack* class subs were the first "nukes" to receive the so-called tear-drop hull, designed for increased underwater speed and maneuverability. Another radical change was the positioning of the diving planes (to control the angle of ascent or descent) on the sail of the ship instead of the bow.

The search for the true submarine had almost been completed—yet one thing was still lacking. That was the combination of its stealth and maneuverability, with the capacity to deliver tremendous damage and destruction while remaining submerged. That goal was also being approached by the Navy.

LEARNING BIZ—Students at sub school make dive in control room mockup.





DEEP SUBJECTS—USS *Triton* set record with round-the-world cruise. Rt: USS *Skate* breaks ice at the North Pole.

WITH THE ADVENT of the *Polaris* missile (see ALL HANDS, September 1960), the nuclear-powered subs were soon to become a mainstay of our national defense strategy.

Guided missiles opened up a new field in submarine warfare. For the first time, submarines would have a capability of destroying enemy submarines and surface craft at their bases and of neutralizing the building yards and supply depots.

Realizing the missile would offer a powerful and new offensive weapon, the Navy developed two submarines which were equipped to launch the *Loon* missile. Its potential was dramatically demonstrated in 1949 when, on maneuvers, a sub successfully launched a *Loon*.

The *Loon* was followed by the *Regulus*, an airbreathing guided missile that can deliver havoc to any enemy. USS *Halibut* (SSGN 587) was constructed to deliver five of these missiles and, with four conventional *Regulus* launching submarines, has been a member of our nuclear deterrent force for the past five years.

On 28 Nov 1955 the Navy announced plans for having nuclear submarines, capable of firing missiles from submerged positions, operational by 1962. Preliminary work was started, but in 1957 the Secretary of Defense gave the program urgent priority, with a target date of 1960.

Faced with a race against time, a Navy contractor redesigned plans for an existing nuclear attack submarine, adding a 130-foot missile compartment and providing space for highly sophisticated navigational, stabilizing and fire control systems. At the time, much of this equipment had not even been designed. Space aboard the submarine was allocated and manufacturers were advised to build the equipment to fit the space, an unorthodox procedure that worked because of the close coopera-

tion of the Navy-industry *Polaris* team—a team of more than 11,000 industries across the country.

When designs were approved, the shipyard began construction of *George Washington* (SSBN 598), the first Fleet Ballistic Missile submarine. The ship, one of the most complex ever built up to that time, was launched just 18 months after work was started, and was commissioned in another six months, marking an unparalleled shipbuilding accomplishment.

THE MOST significant milestone in the program came on 20 Jul 1960, when *George Washington* fired two *Polaris* missiles from a submerged position off Cape Kennedy. The ship wired the President: "*Polaris*, from out of the deep to target . . . Perfect."

Since then, every *Polaris* submarine in commission has made successful submerged firings, and one, USS *Ethan Allen* (SSBN 608), launched a live missile during 1962 atomic tests in the Pacific.

It was not until *Ethan Allen*, launched in 1960, that the Navy had an FBM submarine designed as such from the keel up. Following the *Allen* class was the *Lafayette*, a longer and heavier class which incorporated ideas resulting from patrol experiences. One of the principal features of this class is greater habitability to ease the rigors of *Polaris* patrols, which last for about 60 days.

From a military standpoint, the *Polaris*-armed submarine offers certain unusual advantages as a deterrent and retaliatory weapon. Its launching position cannot be zeroed in for a surprise attack. Its angle of missile fire cannot be calculated in advance for aiming a counter missile, should such a weapon be developed. The target represented by a submarine is mighty small for attack

by ballistic missile—even if that target's approximate location were known in advance.

By moving around, such a submarine can completely upset attack calculations applicable to fixed launching positions. Its very mobility, as well as its underwater concealment, calls for wide dispersal of enemy search forces.

ANOTHER FACTOR that greatly increased the capabilities of the submarine is deep submergence. When the third dimension of depth is greatly increased, the anti-submarine tactical problem is made more difficult. Antisubmarine weapons must be designed to travel faster and farther underwater and have enhanced guidance and target-seeking capabilities.

On board *Polaris* subs, the crews work under conditions that can only be described as luxurious by early submarine standards. Interior space is roughly twice as great as that in conventional subs, as we mentioned earlier. In addition, due to the ability and, in wartime, the necessity, to stay underwater indefinitely, great care has been taken to make the submarine's living spaces particularly suited for around-the-clock occupancy.

If the long leap to nuclear power for submarines has been swift, the events which have followed in the 10 years of nuclear propulsion have been no slower. In this decade 92 nuclear submarines have been authorized by Congress, of which well over a half have been launched and over a third commissioned.

What's most important is the maturing of the nuclear submarine with the *Polaris* missile, thus giving us one of our primary deterrent weapons—the nuclear-powered fleet ballistic missile submarine.

—Bill Howard, JO1, USN



ON CRUISE—Visitors observe flight operations from bridge of USS *Enterprise* (CVAN 65) at sea during world cruise.

In Orbit Under Nuclear

THE WORLD'S FIRST all-nuclear surface task force was formed last June when USS *Enterprise* (CVAN 65), *Long Beach* (CGN 9) and *Bainbridge* (DLGN 25) met at a rendezvous point in the Mediterranean Sea.

An atomic task force has been desirable since September 1961 when *Long Beach* was commissioned in Boston, Mass. Nuclear ships had many advantages over older types, but tacticians knew that for the time being the ships would be limited by the non-nuclears in their company. Theoretically, a nuclear powered ship in a conventional force might as well be dragging her sea anchor. That's exactly the way it turned out.

Enterprise can steam for years without refueling. She can maintain high speeds indefinitely but, when she operates with conventional groups, is restricted by concern for their economical cruising speeds and can go no further than she can sup-

ply them with fuel, either from herself or from tankers.

Bainbridge once crossed the Atlantic with a fossil-fuel task group during rough weather. Progress was frequently delayed while the flagship turned into the sea and refueled the escorts. *Bainbridge* was forced to loaf along at a fraction of her speed, then mark time while the other ships satisfied their appetites for black oil.

LONG BEACH had similar problems. Finally, when enough nuclear surface ships to form a task force had been commissioned and thoroughly tested, the problem was solved. Operating with their own kind, the ships can now maneuver and maintain their maximum speeds without regard for the logistic problems common to conventional forces. Unencumbered, they can make the most of atomic power.

Offensively, the trio are probably the most formidable group ever deployed by any navy. *Enterprise* can

launch an attack, either nuclear or conventional, with a number of aircraft, including the all-weather attack bomber A5 *Vigilante*, the Mach II F4 *Phantom II* (which can double as an interceptor) and the A4 *Skyhawk*. The operation could be backed up by the *Talos* missiles of *Long Beach*.

The force is guarded against surprise attack in several ways. *Enterprise* carries the E2A *Hawkeye* radar plane—often called the *Willie Fudd*—which can be stationed as an airborne picket. In addition, *Long Beach* and *Enterprise* are equipped with the new long-range non-rotating radar antennas.

An enemy attack by air would be met by the carrier's 1000-mph F8 *Crusaders*, the *Phantom II* fighter-bombers, or the *Terrier* missiles carried by two ships in the force. Attack from under the sea would be countered with *Asroc* missiles from both *Long Beach* and *Bainbridge*.

Any ship is less open to atomic



SEA ORBIT—Nuclear powered surface ships steam side by side. Below: Jets ready for launching from *USS Enterprise*.

Power

attack than a fixed target. The nuclear task force, by virtue of its high speed, is even less vulnerable than others. Experts believe, for instance, an ICBM attack would be completely futile. During the time lapse between the missile's pre-flight alignment and the firing order, the task force would be elsewhere.

And, if the group *should* come under attack, it is less susceptible to battle damage than conventional forces. All oil-burning ships have air intake vents which supply the boilers with air—if these are blocked by wreckage or must be sealed off due to fallout, the fires cease to burn.

Nuclear reactors, on the other hand, operate without oxygen.

PARTICULARS about the nuclear reactors are classified, but the basic theory may be found in most high school physics books. All ships in the force carry pressurized water reactors much like those which power nuclear subs. *Enterprise* has eight





NUCLEAR NAVYMEN relax on world cruise and watch USS Long Beach.

of these. *Bainbridge* and *Long Beach* each have two.

Aside from the ability to maintain high speed and cruise for almost unlimited range, which are the most important points for nuclear power, there are several incidental advantages. Perhaps the most publicized of these is the lack of smoke.

The lack of smoke also contributes to more effective operation of topside gear, slower deterioration of delicate machinery, aircraft and equipment and, most notably, pilot safety while landing aboard the carrier.

From the seaman's point of view, this means less work. Smoke is largely responsible for the rapid tarnishing of brightwork, for grimy bulkheads, and for the greasy lint which settles on overhead pipes and around hatch cowlings.

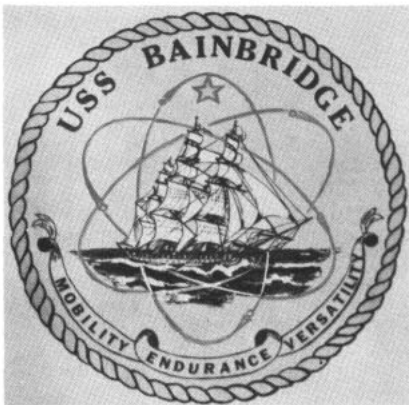
On request from the bridge, the reactors can produce full power on a moment's notice, an extremely important asset in an emergency. On conventional ships there is a time lapse—sometimes as much as 30 minutes—while the black gang builds up steam pressure.

It's been said the nuclear task force could remain at sea until either the hardtack ran out, or the crew went stir-crazy. Either eventuality would take quite a while.

Because the ships do not carry fuel oil they have more space for food, ordnance gear, typewriter ribbons, repair items—anything which might be needed on an extended and independent voyage. This is especially important on the carrier, for she must carry fuel for her aircraft.

And, as for the crews going stir-crazy . . . a ship is a ship, but *Enterprise*, *Long Beach* and *Bainbridge* rank with the best when it comes

to habitability. All spaces are air-conditioned. Each bunk has a separate cool air outlet, a reading light and a foam rubber mattress. Lockers are extra large. There are lounges and a library. And the chow, accord-



ing to those who should know, is excellent.

APPROXIMATELY one month after the formation of the all-nuclear force, Rear Admiral Bernard M. Streat, task group commander, announced that the group would be relieved in the Med one month early and proceed home the long way—eastward. Down the coast of Africa, across the Indian Ocean and the South Pacific. Around Cape Horn, up the east side of the Americas to their home ports on the east coast of the U. S.

The 6000 men deployed with the task force greeted the news warmly. Although the new orders would keep them away from home an extra month, there were compensations. How many men can say they've circled the globe?

Training was the prime reason for the long voyage. Soon after the sailing orders had been made public the late Admiral Claude V. Ricketts, Vice Chief of Naval Operations, said the Navy hoped to gain experience in long distance operations as well as to familiarize the nuclear surface crews with infrequently visited ocean areas.

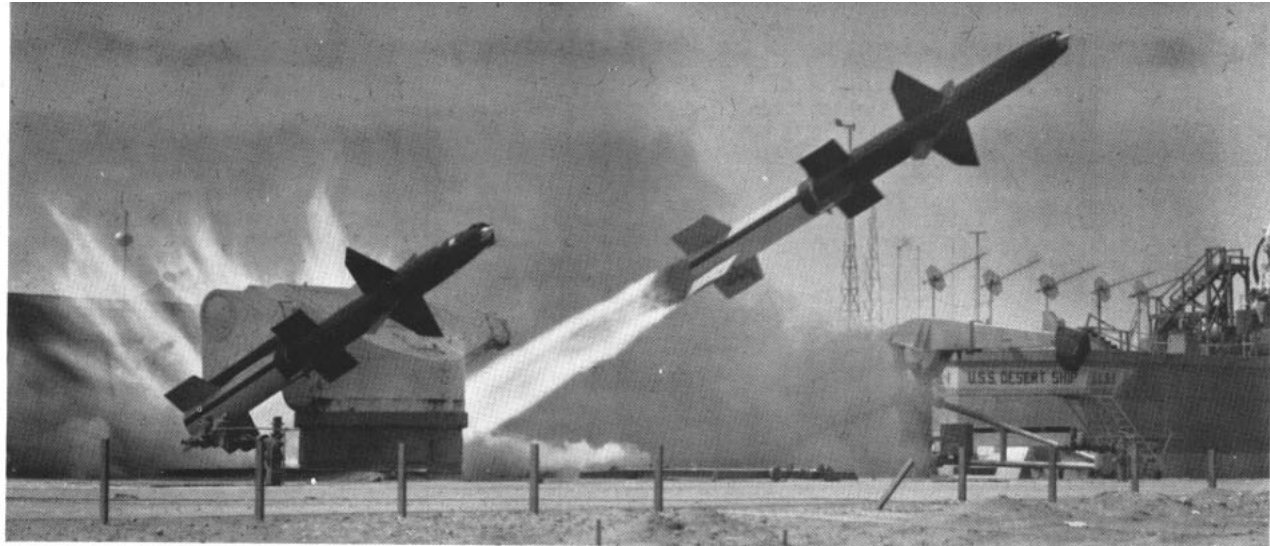
In emergencies nuclear ships—both surface and sub-surface—could be ordered halfway around the world on moment's notice. Atomic submarines have made several globe-circling voyages, but surface ships hadn't had the chance.

Enterprise is too large to pass through either the Suez or the Panama Canals, so the task force will go around both the Cape of Good Hope and Cape Horn, crossing the equator at least twice. During the entire cruise the ships will not refuel or replenish. If they stop at any ports before reaching the States it will be for diplomatic reasons and to give the crew some liberty.

Things were different back in 1907-09 when the Great White Fleet made the circumnavigation. They were forced to make frequent stops to take on coal and other supplies, and the voyage stretched into 14 months.

But that was the old Navy. *Enterprise*, *Long Beach* and *Bainbridge* will take their time and reach the eastern coast of the United States about 60 days after leaving the Med.

They should be home in time for the launching of the Navy's fourth surface nuclear vessel, *Truxtun* (DLGN 35). —Jon Franklin, JO1, USN



SHIP OF THE DESERT—Desert Ship (LLS 1) fires Talos. Below: Three-dimensional plotter tracks missile's flight.

Desert Ship in Action

Ships are usually built to go to sea, but not always. There's one such ship that will never single up its lines. It's homeported in the south central New Mexico desert.

It's not actually a ship; it's a concrete building at the Naval Ordnance Missile Test Facility, White Sands Missile Range, N. M.

It may not look like a ship from the outside, but the interior makes a sailor feel right at home. Such terms as "deck," "bulkhead" and "ladder" are used as often in this ship as the seagoing variety.

The men of the desert Navy have named their sand and tumbleweed vessel appropriately—*Desert Ship* (LLS 1). LLS means landlocked ship, of course.

Missile testing is what happens at the *Desert Ship*. The *Talos* surface-to-air guided missile—the same type as used by the new guided missile cruisers—was tested there.

With *Talos* already operational, *Desert Ship* tests the newer versions of the missile. New radar systems destined to replace those in the Fleet are also tested.

Facilities in the *Desert Ship* in-

clude machine shops, missile assembly and checkout buildings, and a tall steel tower used to launch the *Aerobee* upper-atmospheric research rocket. This rocket is used for probes into space; it provides information for the National Aeronautics and Space Administration (NASA), Air Force, the Naval Research Laboratory and other government and scientific agencies.

Everyday operations and administration of the *Desert Ship* employ the knowledge and experience of 13 ratings, including GM, RD, MT, FT, IC, ET, EM, MM, EN, YN, SF, PH and HM.

Construction of the *Desert Ship* began February 1952 and was completed June 1953. It was built to determine whether guided missiles and associated equipment would be practical aboard ships. *Desert Ship* proved that they would.

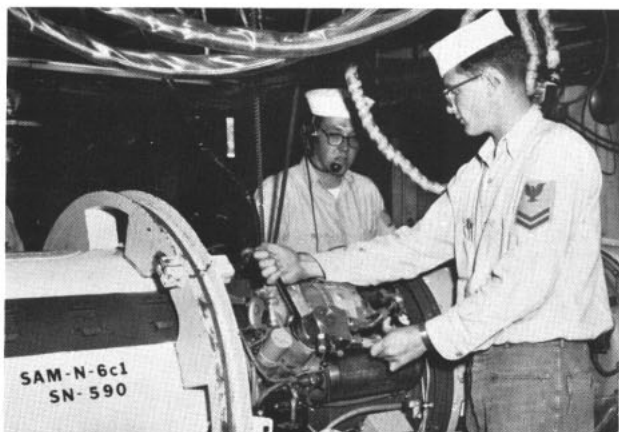
The first tests were concerned with a ram-jet engine missile, the forerunner of today's *Talos*. Since then, the landlocked ship has fired over 600 missiles, rockets and test vehicles for the Navy, Air Force, NASA and other agencies.



BELOW: Cameras make a visual record of missiles fired from *Desert Ship*.



GETTING SET—Navy missilemen make sure everything is A-OK with the guided missile before it is launched.





Navy Sports:

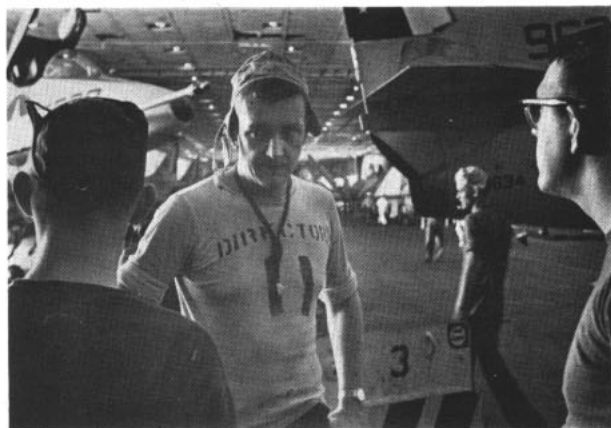
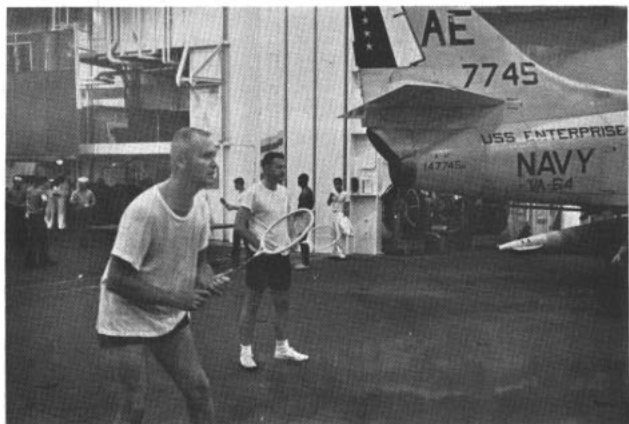
BASKETBALL GAMES, championship volleyball play-offs, badminton, ping-pong. Location, local YMCA, Any Old Town USA?

Not so in this case—it's the hangar bay of the world's largest warship, the nuclear powered aircraft carrier *USS Enterprise* (CVAN 65)—at sea—cruising around the world.

Enterprise can be considered a city within herself. The 85,350-ton ship is over 1100 feet long, has a width of 252 feet at the flight deck, enough air-conditioning to serve over 400 homes, can produce enough fresh water daily to supply over 1400 homes. Her height is equal to that of a 25-story building and, if her blueprints were laid end to end, they would cover an area large enough for 35 full-length football fields.

So, with all that room there is space for sports. During holiday routine aboard the *Big E*, the crew breaks out the portable athletic equipment, and the games are underway.

This story was written during the world cruise made by *Enterprise*, *Long Beach* and *Bainbridge* as Task Force ONE, the Navy's first nuclear powered surface





Nuclear Style

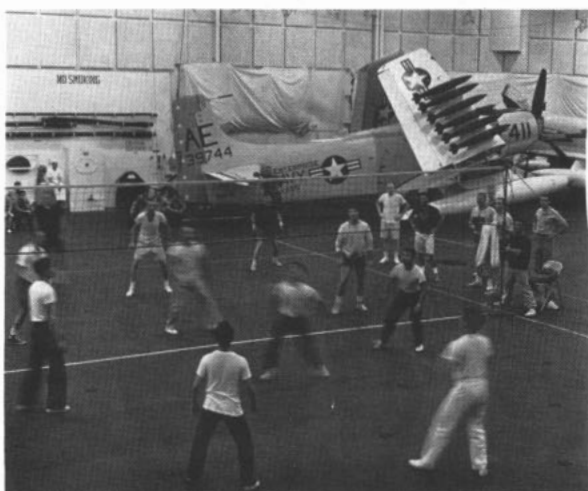
task force, under the command of Rear Admiral Bernard M. Streat.

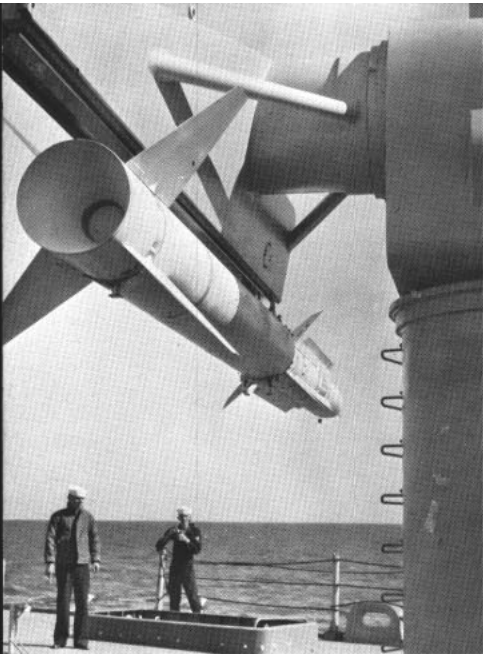
During the cruise the *Enterprise* Special Services department sponsored the "Sea Orbit" sporting activities, including basketball, volleyball, badminton, boxing and ping-pong. Teams composed of the various squadron personnel vied for the honor of being champions and having their team names inscribed on a plaque displayed on the quarterdeck.

The last games were in process, most of them had been completed for the day. Now the word was passed to take down the athletic gear, play time was over. *Enterprise's* crew was ready once again for action—if the need ever arises.

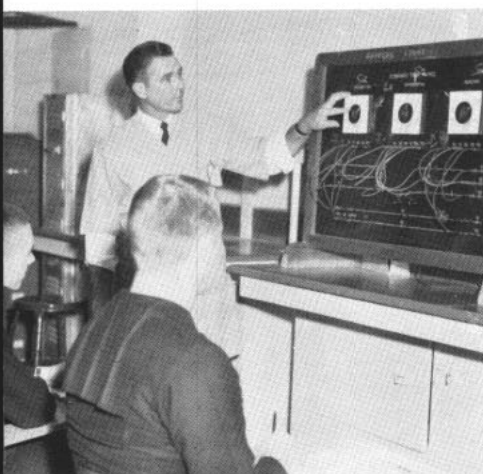
Clockwise from upper right: (1) *uss Enterprise* (CVAN 65), site of Sea Orbit activities. (2) Organizing a team. (3) *Skyraider* background for volleyball championship. (4) Participants: *Enterprise*, *Long Beach*, *Bainbridge*. (5) Let's clear a playing area. (6) Replacing a jet after games. (7) Badminton in hangar bay. (8) Work when games are over. (9) Table tennis silhouette against ocean backdrop.

Story by: Russ Egnor, JO2, USN
Photos by: M. E. Nuttall, PHC, USN

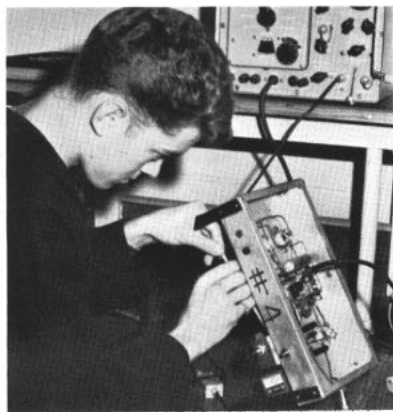




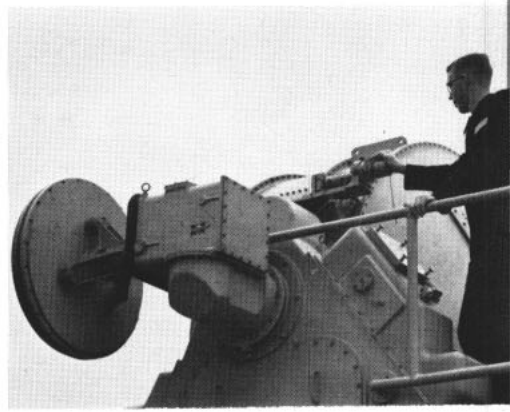
TERRIER (above) is no stranger to Guided Missile School graduates.



CLASS — Trainees learn principles of missile guidance systems. (Below) FBM students see the tube from which the *Polaris* missile is launched.



TRAINEES repair power supply (left) and prepare to align radar.



Dam Neck—A Darn

IN THIS AGE of missiles and space exploration, it is not surprising that the Guided Missiles School, Dam Neck, Virginia Beach, Va., is one of the fastest growing activities in the Navy.

Since it first started in 1962 the school has grown from a handful of people, training in the *Regulus* missile in a World War II temporary building, to more than 200 people working with the most modern missiles and equipment in the most modern facilities.

And it is still growing.

The mission of the Guided Missiles School is "to supply the Fleet with personnel trained in the operation, maintenance and repair of guided and ballistic missiles and missiles systems." The emphasis is on maintenance and repair, and the operation is essentially limited to individual components of the systems.

The school is made up of what could be three different schools.

- The first is the Missile Technician Class "A" School. Here the student acquires an introduction to the basic principles of ballistic missiles.

- The second major area is in surface-to-air missiles. Studies in the Surface Missile Systems (SMS) department include the Navy's three "Ts"—*Terrier*, *Talos*, and *Tartar* missiles.

- The third major area covers the fleet ballistic missile. Here, the *Polaris* missile system is studied.

Student quotas at the Guided Missiles School are all controlled by the Bureau of Naval Personnel. A GCT/ARI combination of 115 is required of all Basic MT "A" School

students. Advanced courses in the FBM and SMS departments require that the students be career designated with six years of obligated service.

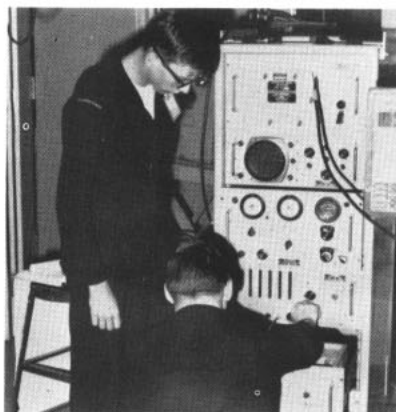
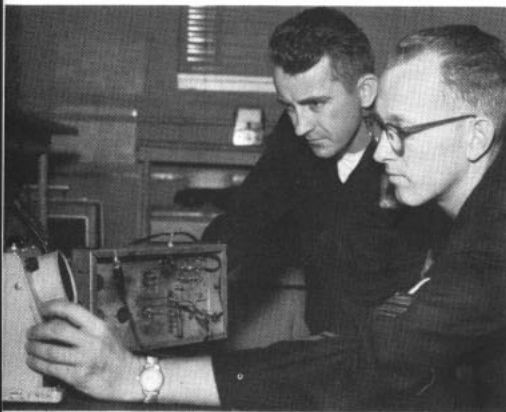
STUDENTS AT DAM NECK RANGE from new seamen right out of boot camp (who attend the "A" school) to admirals. The latter receive instruction in the *Polaris* Orientation Course.

The "A" school students have been given an opportunity to volunteer for the *Polaris* program if they have shown native ability in electronics fields, as demonstrated by their Navy Classification scores. But, just as a certain number of students wash out of college after gaining entrance through college board examinations, so do some of the "A" school students fail in the missile program. The current academic casualty rate is about 15 per cent.

It's an interesting, challenging and rewarding course.

The "A" school provides 22 weeks of instruction in which the student is taught basic electricity, electronics and the fundamentals of ballistic missiles. Upon completion of this course, those men who are destined for submarine duty go to Submarine School and, after qualifying for submarine service, return to the Guided Missiles School for advanced *Polaris* training.

In the surface missile systems department the course expands to include systems training in individual SMS components. These are complete missile systems, or partial systems, installed at the school. A \$250,000 extension to the existing



STUDENTS (left to right) test electronics power, check signal computer, and operate missile system control console.

Good Guided Missile School

facilities is now underway. It is scheduled for completion in early 1965, and will train students in the latest *Terrier* fire control systems.

A MAJOR FEATURE of the improvement of facilities will be a classroom-laboratory combination. Through the use of folding doors an area can be used separately as a classroom and laboratory or as a combined classroom-laboratory. This permits a great deal of flexibility under varying training loads.

Prospective commanding officers and executive officers of both *Polaris* submarines and surface missile ships, as well as surface missile ship officers, missile fire-control officers, and *Polaris* weapons officers and navigators, attend the Dam Neck school.

Senior officers attend a special three-day orientation course in the *Polaris* missile.

Altogether, if one man were to attend all the courses—with no repetition—it would take him about 11 years to complete his studies.

AN ACTIVITY that's growing in numbers (of students) must grow in facilities (to take care of them).

This is what is happening, but even so the speed-up in the *Polaris* program has brought some growing pains with it. Despite corner-and-red-tape-cutting at all levels, the student load has grown faster than new facilities.

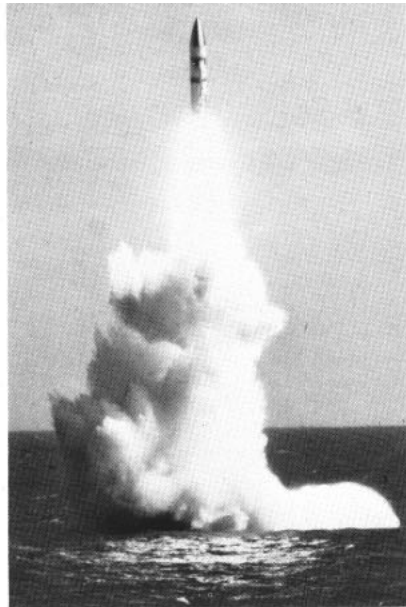
Originally housed in temporary World War II buildings, the Guided

Missiles School moved into a modern new building in 1958. Further expansion demanded a second building in 1960—the Guided Missile Annex, and in 1961 it became necessary to use a building belonging to the Fleet Anti-Air Warfare Training Center. As the Fleet's demand for Guided Missiles School graduates continued to increase, the school was finally forced to reoccupy the old temporary buildings once again.

Currently nearing completion is a new *Polaris* training building, the only one of its kind in the world. Named in honor of Vice Admiral W. F. Raborn, who headed the *Polaris* program as Director of Special Projects, it was scheduled to be ready this year, and is receiving the finishing touches at the present time.

THE *POLARIS* Training Facility at Dam Neck, Virginia Beach, Va., is where future FBM technicians will learn trade.





GRADUATES from FBM phase of Guided Missile School fill billets in *Polaris* launching subs like one shown above.

During the building period, there has been a shortage of everything—that is, everything but students. Classrooms, barracks space and laboratories were insufficient, but the students kept coming. As a result, the school has been operating in two and, at times, three shifts. The student load has stayed so consistently ahead of facilities that current plans call for two-shift operations as far as can be foreseen in the future.

WITH TWO CREWS required for each *Polaris* submarine, a great deal of equipment is necessary.

Wherever possible, tactical equipment—the same as that installed in the submarine—is used. Only those items peculiar to a submerged submarine which cannot be physically duplicated are handled by other than tactical equipment. These include such factors as movement, rolls, pitch and movement of water over the submarine. For these items, simulators or stimulators are used to make the equipment “think” as though it were underway.

An actual *Polaris* launch tube

stands in the rear of the main Guided Missiles School building. Formerly used at Mare Island Naval Shipyard for *Polaris* test firings, the tube was dismantled and shipped to the Guided Missiles School, where it became operational for training purposes in 1960. It is used for training launch personnel.

It fires a four thousand-gallon slug of water.

Equipment requirements at the Dam Neck school are determined on the basis that 50 per cent of a course will be laboratory work. This lab work is necessary to train technicians in the maintenance and repair of complex equipment. In addition, only a few men—three or four at most—can profitably work on certain pieces of equipment at one time.

High costs make it necessary to use the equipment to the maximum to reduce total requirements; thus it's necessary to plan for two-shift usage for long-range requirements. Three-shift usage is not feasible because, even in a repair and maintenance school, equipment must be kept working. At Dam Neck the third

shift is allocated for routine maintenance on the school's equipment.

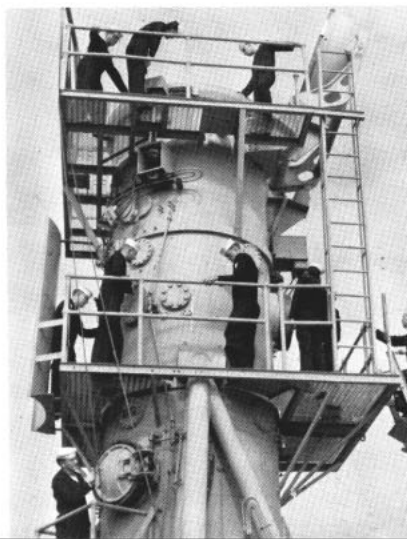
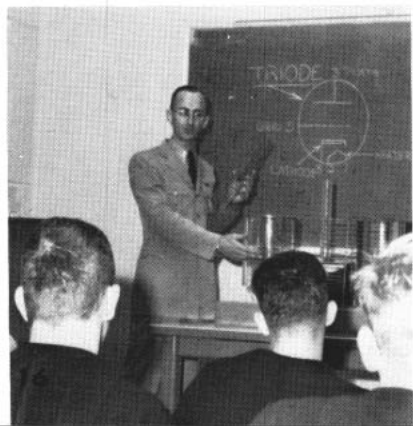
IN POLARIS TRAINING at Dam Neck, each crew of the SSBN 598-608 class submarines requires about 31.5 man years of training at the Guided Missiles School. This does not include instructor time or Class “A” school time. Technical advancements which go into the SSBN 616 and SSBN 627 classes will increase these training requirements to 35.5 man years.

With the number of men taking Class “A” School training and surface-to-air training, added to those studying *Polaris*, the number of graduates last year was about 4000.

One of the many signs of success of the Guided Missiles School is its participation in the STAR Program. It recently won a commendation from the Bureau for the number of personnel reenlisting as STARS.

It is claimed that the Guided Missiles School's total STAR Reenlistments for fiscal 1963 are an all-Navy record. The regular reenlistment rate is an outstanding 98.3 per cent.

ON BOARD — Students are taught theory of electrodes. (Right) FBM trainees see *Polaris* launch tube.



INSIDE JOB — Students in MT 'A' School try hand at making repairs to electronics power supply unit.



Guide for Vigorous Volunteers

T IRED OF PINOCHLE, cribbage and acey-ducey? Next time you feel the urge for a little recreation, why not round up the gang for a game of *Skirmish*? Or, if you prefer, try *bombardment*, *attack* or *long ball*.

Chances are you've never heard of these games, but they're all real. They are among many lesser known sporting activities listed in a new booklet published by the BuPers Special Services Division, titled *Guide For a Vigorous Voluntary Sports Program For Ship and Station*.

Don't let the title frighten you—it's not part of some scheme to force

any number of players can be fielded. A playing area 40 by 60 feet is recommended.

Two teams of equal strength stretch across opposite ends of the field, facing each other, about 40 feet apart. Each player has a hat or similar object, which he drops on a line drawn just behind where his team is lined up at the start of play.

The starting signal invites the ensuing melee. The object is for players on each team to guard their own hats and, at the same time, capture opponents' hats. One strategy is for each team to send some men to attack the opposing side while keep-

seized and taken home successfully (kept until the finish of play).

Bombardment, like skirmish, is slightly reminiscent of school-day games, but with enough twist to avoid puerility. Ten to 15 volleyballs are needed for 20 to 40 players, on a level area 50 by 75 feet with a center dividing line.

The balls are placed along the center line and the two teams withdraw to opposite ends of the field. On signal the teams converge. They race to grab up as many balls as possible, then begin bombarding each other. No member of either side may cross the center line.

Any man hit by a ball drops out, unless he catches the ball. He may then continue to play, hurling the ball back in an attempt to put an opponent out. The team having the most players in the game at the end of a pre-determined time wins.

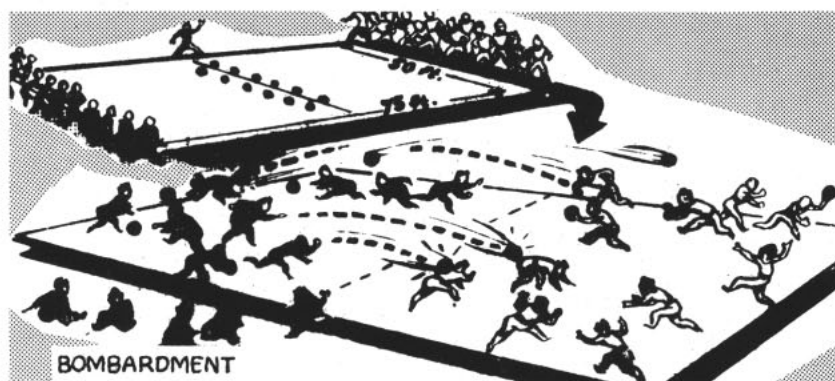
Attack is probably best described as field basketball, a game which can be played by 12 to 20 men.

In addition to the above, the sports guide booklet includes instructions for playing *swat ball*, *kick ball*, *Indian ball*, *four-man volleyball*, *paddle badminton*, *cage ball*, *line soccer*, *American ball*, *box basketball*, *tether ball*, *box hockey*, *push ball*, *bar wrestling* and *line rush*.

The beauty of these games, many of them admittedly old standbys for school kids, is that they don't require a lot of special equipment, special playing areas or much organization, and there are games for almost any number of players. Many can be played aboard ship.

The main point is, the sports guide booklet can be an invaluable aid for the special services officer and the barracks group alike. It has been distributed to all commands (NavPers 15975).

As the saying goes, may the best team win. —Bill Howard, JO1, USN



you out on the playing fields if you'd rather be in the hobby shop, on liberty or in the rack. It is a very useful booklet that provides many suggestions on how to work up some activity when things are dull. And it does much more.

The main problem faced by any group when trying to organize sporting activities is *how* to organize them. This booklet is a storehouse of indexed information on the subject, covering everything from how to make best use of available facilities and how to arrange schedules and conduct tournaments, to a breakdown of sports appealing to various age groups and how equipment should be sized and ordered. It lists official rules and reference books, describes the techniques of being host for a tournament, discusses sports leadership, and even tells how to publicize and promote the program.

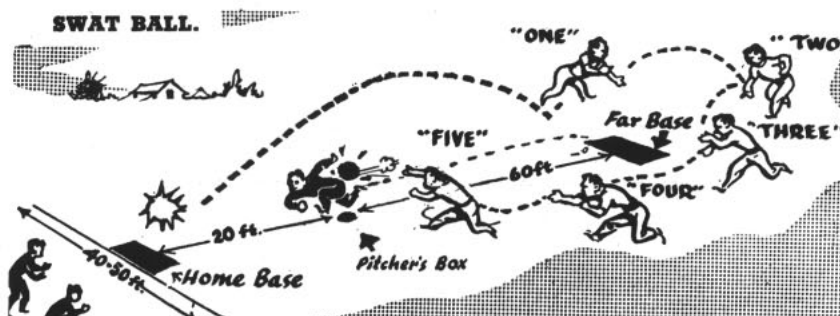
An example of what the booklet offers is the illustrated section on "Types of Sports Events." Here we learn how the game of *skirmish* is played. This is a good game for spur-of-the-moment activity because

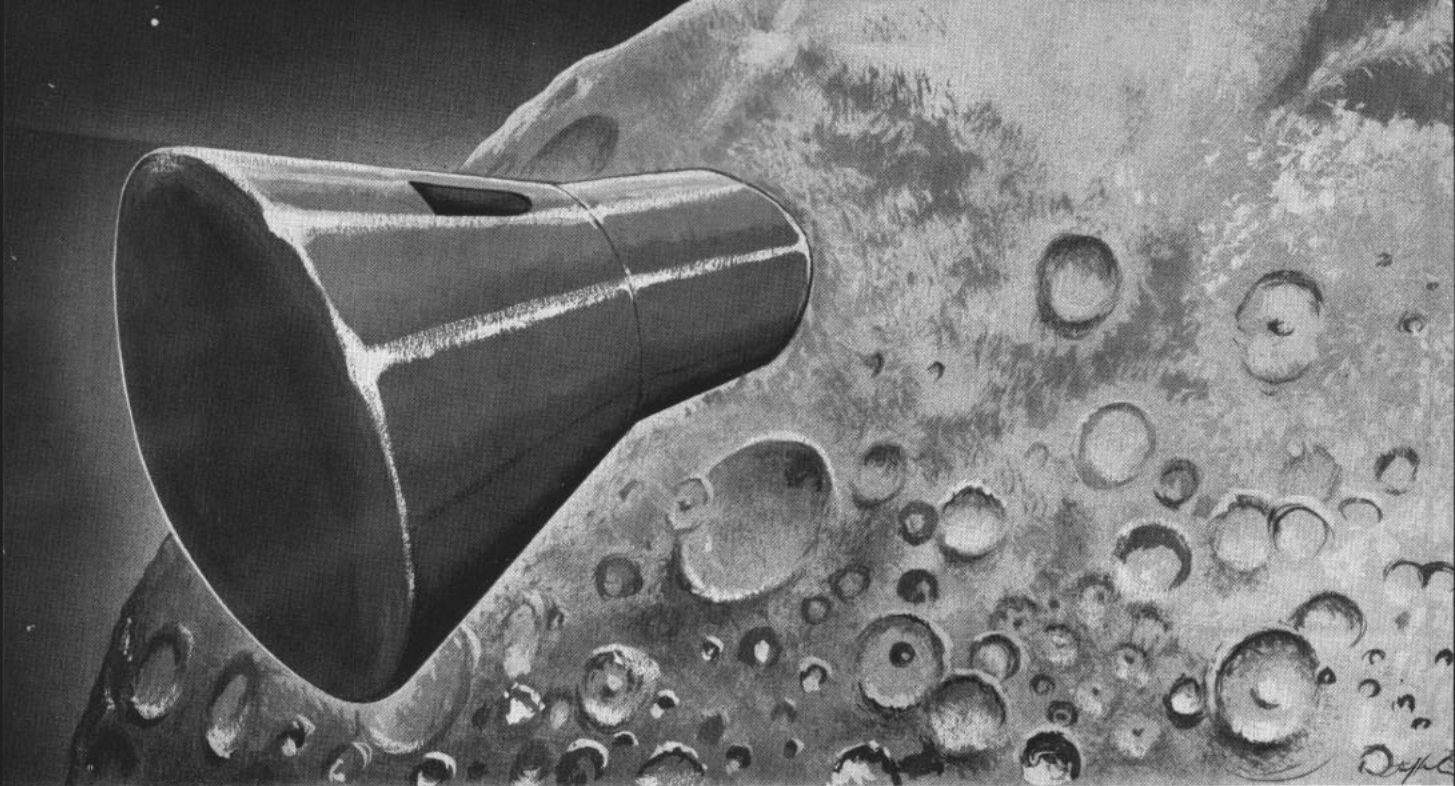
ing some men back as home guards.

Depending on the rules decided upon, a player may be restricted to capturing only one hat at a time; or, to make it more interesting, no such restriction is imposed.

After a player captures an opponent's hat he tries to get it back to his end of the field before being tackled by an opponent. If he succeeds, he deposits the prize behind his line and renews his attack. If his flight is interrupted by a vengeful tackler, however, the hats must be returned to enemy territory and the player must return home before he can renew his attack.

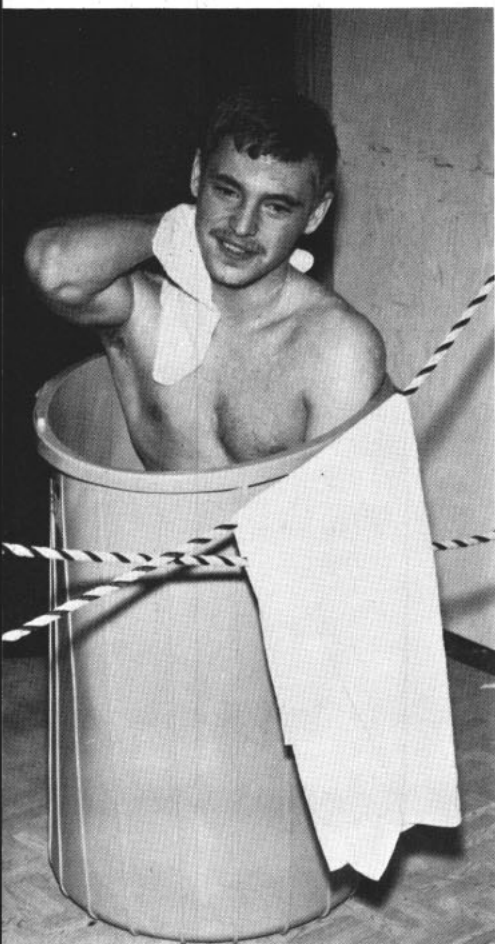
One point is scored for every hat





ON THE WAY—What trip to moon may be like is being answered today in tests performed by Navymen and others.

Four Men in a Square

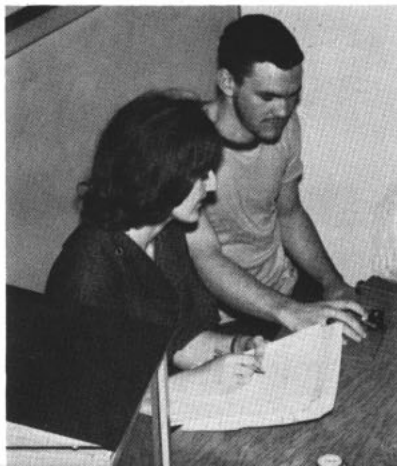


WHAT WILL HAPPEN during space travel to the moon and beyond is pretty well known by now (we think). Navymen and others have been tested for the effects of zero gravity and a multitude of other conditions unfamiliar to earthbound types.

In fact, Navymen have, even while more or less anchored to earth, been subjected to nearly every condition of space flight and lunar environment. Several points, however, remain to be cleared up.

How, for example, will men function outside the earth's magnetic field for extended periods of time?

TESTING—D. C. Albert, AN, from School of Aviation Medicine, takes a bath in 'confinement.' (Below) Reactions of volunteers are tested.



As one might suspect, finding a location on earth where the planet's magnetic field can be suspended for the required period is difficult. There are such places, however, and one of the best is at the Naval Ordnance Lab in White Oak, Md.

Except for the NOL building's isolation and the ample warnings to automobiles and lawn mowers to keep their distance, the building's exterior presents no unusual aspects.

Even inside, it takes a while to note the complete absence of any ferrous, hence magnetic, material.

AT ABOUT the center of the large room, on a small square of special tile, four men sat playing a rather apathetic game of cards. There were screens on two sides of the square and curtains on the other sides. These were for the sake of privacy rather than confinement.

Above the men, a magnetic coil was attached to a non-magnetic girder. The coil cancelled the earth's magnetic field within the square.

The Navymen in the square were enlisted men from the U. S. Naval School of Aviation Medicine at Pensacola, Fla. They had volunteered, upon leaving boot camp, to be professional guinea pigs. They wanted to be a part of the space age, and this was one way of accomplishing it.

The men wore sneakers with non-magnetic eyes for laces which had non-magnetic tips. Their faces were covered with stubble grown during their confinement, because shaving with metal razors was taboo.

The men sat on non-magnetic chairs at a wooden table held together with non-magnetic screws. On one of the screens there was a calendar marked with Xs and a large red circle indicating the day of the men's release.

AS ONE monotonous day followed another, the men amused themselves by reading and playing cards. They got on each other's nerves surprisingly little.

Two of them—Airmen Ronald and Dwight Thompson, were brothers. The other two, Airman Apprentice Richard Overall and Airman Daryl Albert, had only recently finished working with the Thompson brothers in an experiment on motion sickness—during which they were tossed around like corks in a small ship for several days in an angry North Atlantic.

The men in the square kept themselves fit by doing deep knee bends; walking up and down a two-step stair and running in place.

They bathed in plastic garbage cans which were brought into the square when the occasion demanded. At night, non-magnetic double-

decker bunks were moved into the square and they slept.

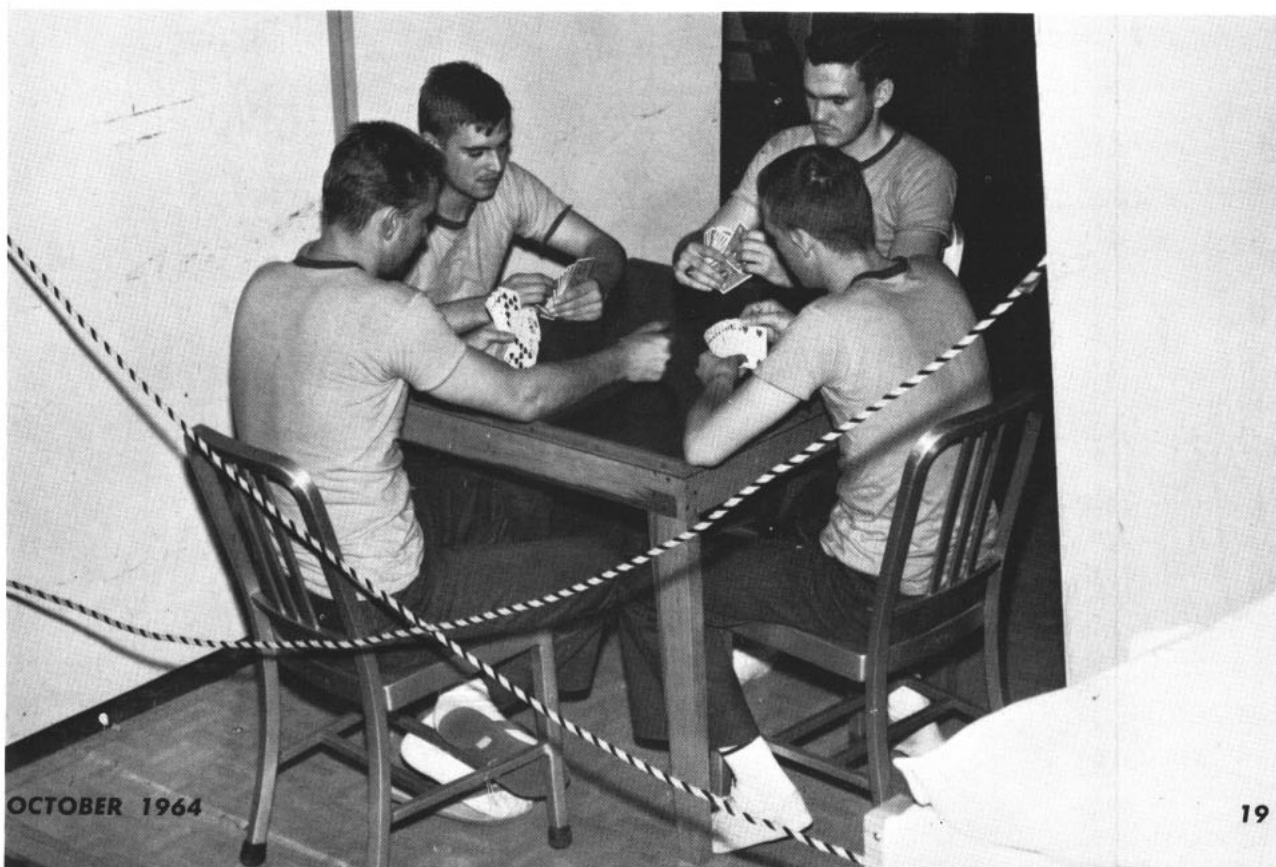
Periodically, the men's responses were tested to see whether or not zero magnetism was affecting their ability to perform tasks requiring the use of their muscles, senses and reflexes. Their state of health was also under constant observation.

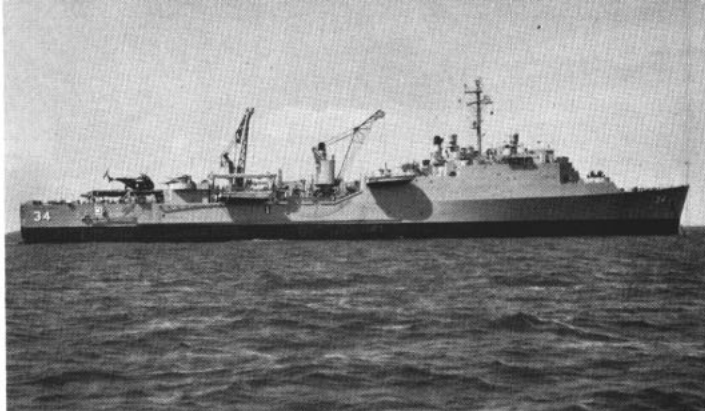
A team from the University of Indiana's Neuropsychology Labora-

tory checked the men's neuropsychological responses after the coil was turned off.

The entire experiment was carefully controlled and the information gathered during the 24 days will be studied closely. When the conclusions are reached, they will undoubtedly make man more certain of his footing when he takes his first step on the moon. —Robert Neil.

BIG DEAL—Navy volunteers play cards during 24-day experiment of living outside the earth's magnetic field.





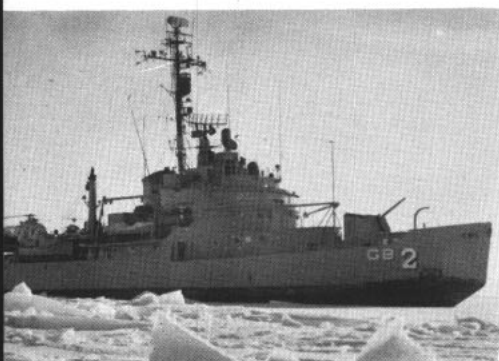
FIRST 'E' INCREMENT

Here They Are: The

RESULTS of the Battle Efficiency competition are published about this time each year, and thousands of whitehats sew the "E" on their uniforms. Signalmen break the meatball pennant. And the E—or a hashmark

under last year's award—is painted on ship's bridge or aircraft tails.

Competition for the E is conducted by type commanders, and ships are judged on their fighting ability as compared to other ships of their



Naval Air Force, Atlantic Fleet:

Enterprise (CVAN 65)
Intrepid (CVS 11)

Mine Force, Atlantic Fleet:

Meadowlark (MSC 196)
Adroit (MSO 509)
Observer (MSO 461)
Pandemus (ARL 18)
Valor (MSO 472)
Exultant (MSO 441)
Aggressive (MSO 422)
Skill (MSO 471)
Salute (MSO 470)
Orleans Parish (MCS 6)
Nahant (AN 83)
MSB 11
MSB 43
MSB 29

Cruiser Destroyer Force, Atlantic:

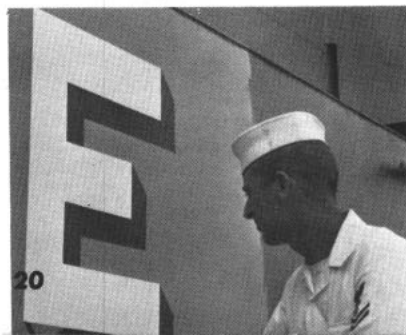
Northampton (CC 1)
Rich (DD 820)
R. H. McCard (DD 822)
Semmes (DDG 18)
Luce (DLG 7)
F. T. Berry (DD 858)
Compton (DD 705)
R. K. Huntington (DD 781)

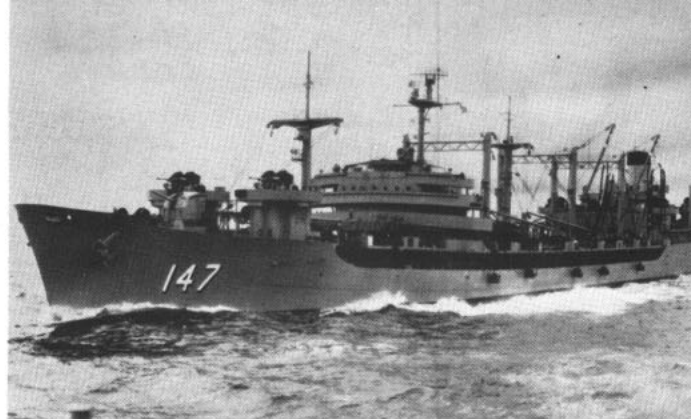
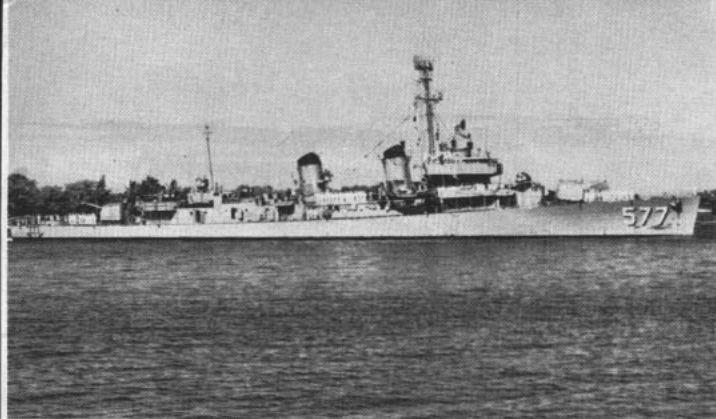
C. R. Ware (DD 865)

Lawrence (DDG 4)
Gearing (DD 710)
DuPont (DD 941)
Warrington (DD 843)
Conyngham (DDG 17)
Beale (DD 471)
Lowry (DD 770)
Laffey (DD 724)
Cromwell (DE 1014)
Kretschmer (DER 329)
J. R. Perry (DE 1034)
Bainbridge (DLGN 25)
Arcadia (AD 23)
Cascade (AD 16)
Greenwich Bay (AVP 41)
Amphibious Force, Atlantic:
Mountrail (APA 213)
Talbot County (LST 1153)
Sandoval (APA 194)
Rockbridge (APA 228)
Donner (LSD 20)
Hermitage (LSD 34)
LCU 1610
Krishna (ARL 38)

Service Force, Pacific:

Pyro (AE 24)
Pollux (AKS 4)





'Elite of the Fleet!'

type. It's usually a pretty rough contest and the E is a sure sign of excellency.

This year well over 100 ships are flying the meatball. The list below is a partial one. Later winners will

be listed as the results come in. If your unit won the Battle Efficiency E, but is not included, write: Editor, ALL HANDS, Room 1809, Bureau of Naval Personnel, Navy Dept., Washington, D. C. 20370

Chemung (AO 30)
Chipola (AO 63)
Mahopac (ATA 196)
Klondike (AR 22)
Grasp (ARS 24)
Cree (ATF 84)
Arikara (ATF 98)
Serrano (AGS 24)

Amphibious Force, Pacific:
Valley Forge (LPH 8)
Summit County (LST 1146)
Kemper County (LST 854)
Vernon County (LST 1161)

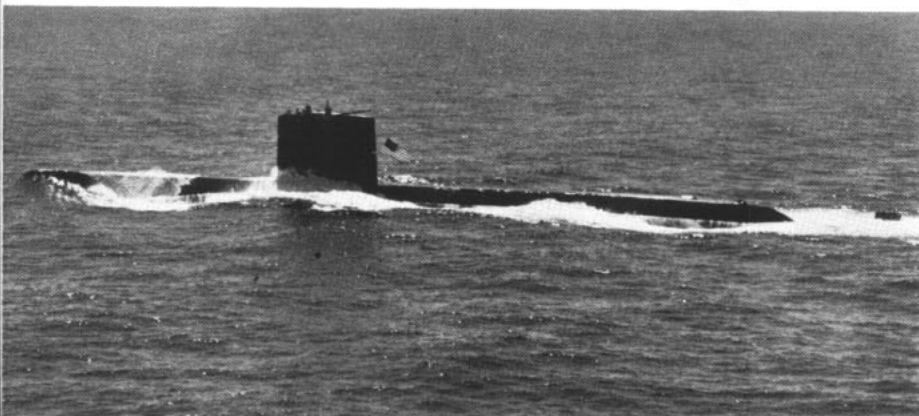
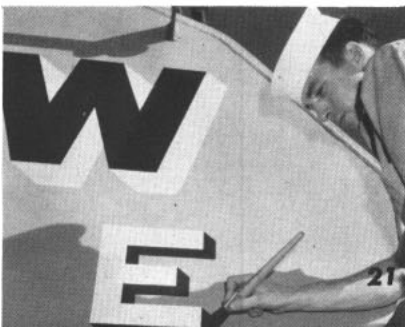
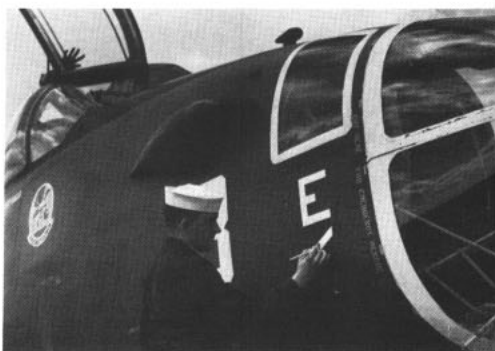
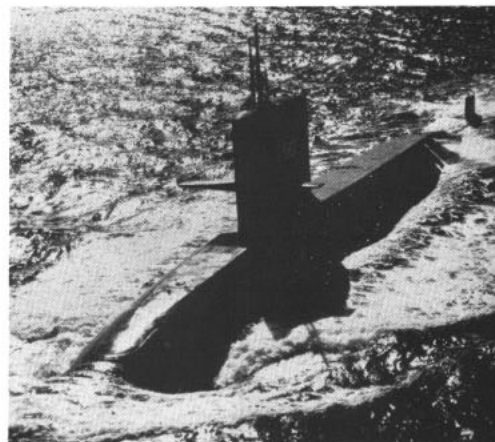
Service Force, Atlantic:
Mauna Loa (AE 8)
Rigel (AF 58)
Altair (AKS 32)
Salamonie (AO 26)
Waccamaw (AO 109)
Truckee (AO 147)
Mattabesset (AOG 52)
Cadmus (AR 14)
Windlass (ARSD 4)
Paiute (ATF 159)
Utina (ATF 163)
Somersworth (PCER 849)
Neptune (ARC 2)

San Pablo (AGS 30)
Edisto (AGB 2)
 MCB 4

Mine Force, Pacific:
Engage (MSO 433)
Persistent (MSO 491)
Whippoorwill (MSC 207)
 MSL 20
 MSL 26

Submarine Force, Atlantic:
Halibut (SSGN 587)
Cusk (SS 348)
Barbel (SS 580)
Permit (SSN 594)
Sea Fox (SS 402)
Capitaine (AGSS 336)
Salmon (SS 573)—Seventh consecutive award
Scamp (SSN 588)
Swordfish (SSN 579)
Blackfin (SS 322)
Wahoo (SS 565)
Chanticleer (ASR 7)

Naval Air Force, Pacific:
Kitty Hawk (CVA 63)
Yorktown (CVS 10)
 Air Antisubmarine Squadron 33





A River

A DAY in the life of the Vietnamese Navy's 21st River Assault Group in My Tho shows even the most casual observer that the unit has developed into a high *esprit de corps* fighting force.

As the day begins for Lieutenant Robert M. Ballinger, USN, MACV's U. S. Navy Advisor to the 21st RAG, he attends a conference with his counterpart, Vietnamese Navy Lieutenant Nguyen Van An. The gist of the conference is always: "Where do we patrol today?"

After carefully laying out their patrol plans they get underway, usually patrolling from shortly after noon until almost midnight. Many times they make contact with the communist insurgents but sometimes they do not.

On a particularly mild day in June, more suited to beach lounging, LT. An announced intentions to patrol a river in the Mekong Delta.

His men hurried to get their craft ready for the patrol. They had just returned from a three-day operation that netted 23 VC killed and were hungry for another victory.

However, the only contact made during the day was with three in-





Assault Group in Vietnam

surgents in a sampan. The four STCANS (French gunboats dating back to the days of the Indo-China war) opened up with their 50 cal. machineguns but the range was too great for accurate shooting and the guerrillas quickly put in to the shore and lost themselves in a mangrove swamp.

The patrol proceeded until the mouth of the Go Cong river was reached and a VC blockade in a canal was found. Suspecting that the blockade was mined, LT. An decided to return to My Tho.

While traveling back under the cover of darkness the *Commandament*, a river patrol boat, which carried LTs. An and Ballinger and their guest for the day, Robert K. Reilly, came under sniper fire from the shore. The gunfire was returned and the group proceeded home.

John E. Jones, JO3, USN

Photo Captions

Clockwise from Upper Left: (1) Slicing through the water as night falls, the STCANS from the 21st River Assault Group continues to patrol, always searching for insurgents. This patrol did not return

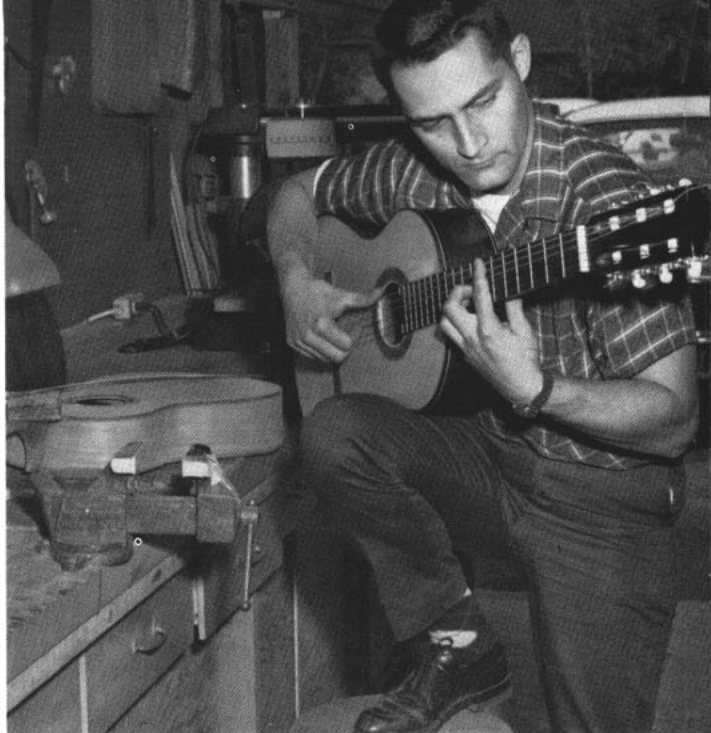
until long after dark. (2) Lookout and radio operator from the Vietnamese assault river group keep a sharp eye for Viet Cong snipers that might be lurking along the shore. Radio operator stands ready to relay any information to other boats of the patrol. (3) Patrol boat closes in on Viet Cong troops in a sampan hidden by the waterspout caused by 50-caliber machinegun fire. (4) LT

Robert K. Reilly and LT Robert M. Ballinger, U.S. Navy advisors to the Vietnam 21st River Assault Group, often live in native surroundings, eating local food in the local manner. (5) This Viet Cong mud bunker and thatched roof lookout post was destroyed by patrol from the 21st River Assault Group of the Vietnamese Navy. A 20mm gun and grenades were used to do the job.





HELLO HOME—Crewman calls home via Wilhoite's ham radio. Rt: R. L. Mattingly, OM2, makes and plays guitars.



Sailors Build Mountain of

NAVYMEN, like many other solid citizens, like to spend some of their free time enjoying their pet avocations. Those stationed at sizable shore facilities frequently have a hobby shop available, equipped with the wherewithal for anything from baking a ceramic coffee mug to rebuilding an automobile engine.

Everyone knows the sailor who bought an old clunker, took it to the hobby shop and came out with a dependable automobile.

Navymen who begin with something better than a beat-up heap find they can save money by using hobby

shop facilities to tune their motors, change points and do the many other maintenance jobs which a smoothly running car requires.

Those interested in building or repairing their own TV sets or yearning to improve the sound coming from their stereophonic tweeters and woofers can use the electronic repair shop, which usually comes complete with other workmen always willing to kibitz and even lend an assist with whatever project is underway.

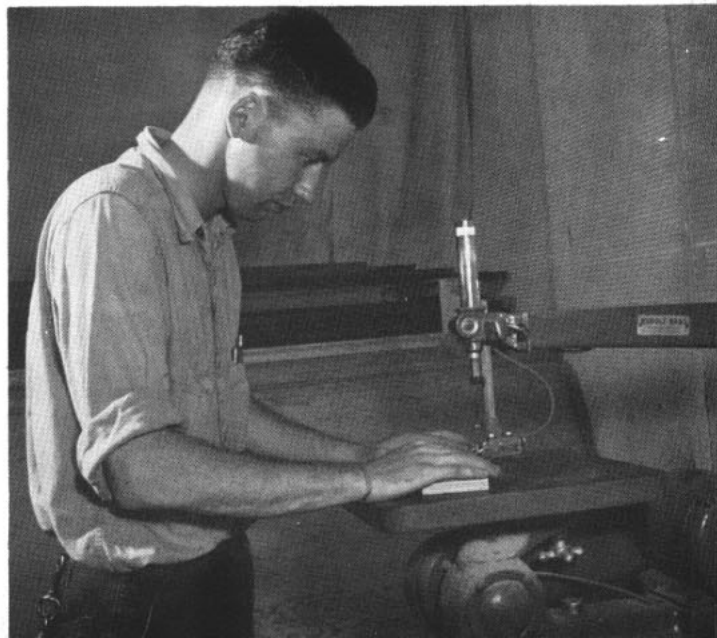
Ceramics shops come complete with firing kilns and the makings for

ash trays, coffee mugs and what have you. Ceramics equipment can, of course, be managed at home but not without considerable cost in both money and space.

Most hobby shops sport carpenter and welding shops where hifi cabinets take shape and the crossbar on Junior's bike can be welded. This is not to mention model-building facilities and resale shops.

BUT HOBBIES aren't confined to the precincts of the hobby shop. Navymen have long been exercising their creative talents in their spare

OFF DUTY—R. O'Hagen, SF3, finishes painting aboard USS Independence. Rt: Wood shop is popular with Navymen.





MUSCIAN Scimonelli, MUCM, took up post horn as sideline. Rt: Motorcycle is worked on in Pfc. Mugu hobby center.

Talent in Off Hours

time, often with notable and profitable results. There was, for instance, the whittler whose skills increased to the point at which he acquired the more dignified title of woodcarver.

His carvings have been exhibited to win blue ribbons, and some of his products sell for as high as a hundred dollars.

Painting seems to be a favorite of many Navymen, and frequently their proficiency benefits the bulkheads of their ships in the form of murals or framed canvases.

uss *Columbus* (CG 12), for instance, was painted in oil by Thomas Zamora, SD2, and hung on board. Zamora had previously done a painting for the U. S. Naval Hospital at Bremerton, where he was once a patient.

The eating spaces in *uss Ranger* (CVA 61) have been enlivened by murals by Brian F. Tucker, an airman on board *Ranger* in 1963.

Earlier in his naval career Tucker also painted six-by-fifteen foot murals behind the mess hall serving line at Miramar.

The crew's dining area in *uss Forrestal* (CVA 59) sports a likeness of the big carrier on what had been a conspicuously blank space. The painting—courtesy of Airman Apprentice Harry M. Allen.

SOME NAVYMEN's avocations directly or indirectly benefit the service,

besides providing recreation. Aero clubs for example; here Navymen who are members can learn to fly at a fraction of the price charged by commercial facilities.

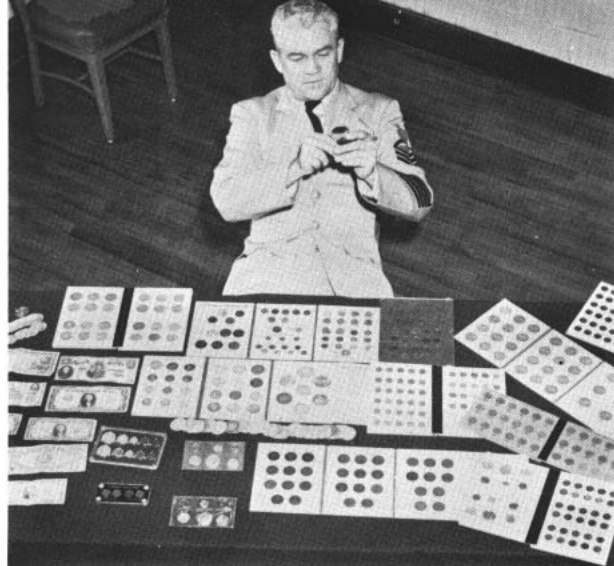
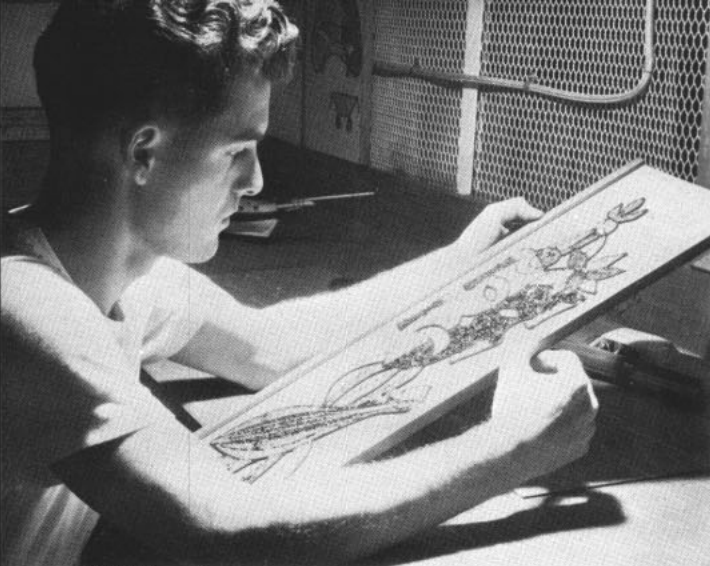
There are also the numerous Navy ham radio operators who are part of a network that can, and does, function in emergencies and provides a link with the folks back home for men having isolated duty.

There are musicians aplenty in the Navy, but some of them develop musical tastes for the exotic or unusual. Steve R. Riccitti, HM3, for instance, developed a skill in playing the Japanese samisen, a banjo-like



COLLECTORS—Phil Clover, CT1, displays part of shell collection. Below: Chess champ, H. Lemkey, QMC, 'collects' from two opponents simultaneously.





HOBBY TIME—R. E. Clark, SN, of USS *Maury* looks over his mosaic. Rt. M. R. Howlett, ADC, exhibits money collection.

instrument with three strings.

Although playing a musical instrument could hardly be classed as a hobby for Master Chief Musician Frank Scimonelli, his mastery of the English post horn transcends the bounds of conventionality.

The post horn is a long pipe-like brass instrument which was used in more leisurely days to inform villagers of the arrival of mail coaches.

Mozart and Haydn wrote music for the instrument, but Scimonelli coaxes sounds out of it that Mozart and Haydn probably didn't dream of.

The entire Scimonelli family, as a matter of fact, takes after Pop (but not on the post horn). Mrs. Scimonelli and the five children join Dad to make up a hot combo.

Stephen B. Lord, ATC, and his daughter have wowed the people of Tennessee with their renditions of Appalachian Mountain folk singing and have made several professional appearances. Day plays the guitar and daughter Valerie plays the auto-harp. Both sing.

THERE ARE, of course, the collectors. Capt. David Hottenstein, MC, USN, and his wife collect rocks which they cut and polish. The captain and his lady won a special award for their collection at the annual show of a gem and mineral society held recently in Jackson, Miss.

A chief warrant officer who was stationed in Japan collected sake bottles which, presumably, were empty at the time of purchase. No two specimens in his collection are the same size or shape.

One of the most practical collectors we know of is the numismatist, who according to Webster, is one

who collects money. One Navy chief of whom we have heard carries his \$4000 collection around in a large bank carrying case. The collection also includes \$500 in Confederate money—just in case.

Another collection, of considerable interest to other collectors and scientists, is an aggregation of shells. The dictionary says a person who collects and studies mollusks and shells is a conchologist. The Navy has at least

Here's Just a Sampling of Suggestions on

A number of informative publications which will help Navy hobbyists increase their leisure-time skills are available through the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

There is a nominal charge for these publications which should accompany your order.

Here are some of the available titles, and the catalog numbers to be used in ordering them, together with the price of each and a brief description:

WOODWORKING

Wood Handbook \$2.00 (Cat. No. A 1.76:72)—An aid to better and more efficient use of wood. Some of the topics covered are: structure and physical properties of wood, grades and sizes of lumber, gluing of wood, plywood and other crossbanded products, bent wood members and more.

Blueprint Reading and Sketching \$1.00 (Cat. No. D 208.11:B 62/956)—Begins with a general discussion of a blueprint. Technical sketching is described and illustrated, and ways are suggested to produce correct and attractive sketches. Also has sections on wiring, schematic diagrams, welding, and architectural symbols.

Carpentry and Building Con-

struction \$.75 (Cat. No. D 101.11:5-460)—Contains details on various phases of carpentry and home construction.

Easy-to-Build Kitchen Cabinets \$.15 (Cat. No. A 1.77:18)—Working drawings for building eight different cabinet units, each of which is designed for a specific need.

Sundials \$.05 (Cat. No. C 13.4:402)—Tells you how to make one and gives a table by which you can equate sundial time to the time in your locality.

CAMPING AND BOATING

Recreational Boating Guide \$.40 (Cat. No. T 47.8/3:B 63)—Designed to acquaint the boating public with the requirements of Federal boating laws.

Camp Stoves and Fireplaces \$.50 (Cat. No. Y 3.Em 3:2C 15)—This is a useful booklet to homeowners as well as outdoorsmen. It is illustrated and gives details on construction.

Harbor Craft Crewman's Handbook \$1.50 (Cat. No. D 101.11:55-501)—This book was written for professional use, but will be valuable to private owners of small boats.

National Watercraft Collection \$3.50 (Cat. No. SI 3.3:219)—A comprehensive catalog of the ship and boat collection in the U. S.



AFTER HOURS—R. G. Edeen, EM1, shows wood carvings. Rt: R. C. Knudwon, OMSA, makes purchase at hobby shop.

one among only a few thousand in the world.

There are, of course, many hobbies in the Navy—the builders of all kinds of models; amateur actors; creators, from such oddments as

hemp line, of whimsical and terrifying creatures; etcetera for a list (in small print) as long as your arm.

If the variety of hobbies to be found in the Navy proves anything at all, it may be that Navymen,

despite the transient nature of their way of living, can nevertheless enjoy the inquisitive and acquisitive hobbies of the more sedentary segments of the population.

—Robert Neil.

Ways to Enjoy Leisure Time—Check Your Library for Others

National Museum, Smithsonian Institution.

RADIO

FM Transmitters and Receivers \$1.50 (Cat. No. D 101.11:11-668)—Details on the operation and maintenance of FM radio transmitters and receivers. Methods of producing frequency modulation are set forth, and the basic circuit of FM transmitters, along with examples of complete and typical sending sets are included.

HORTICULTURE

Part-Time Farming \$.10 (Cat. No. A 1.9:2178)—Whether and how a city feller should putter around on a small plot of farm land in the country.

Suburban and Farm Vegetable Gardens \$.25 (Cat. No. A 1.77:9/2)—Simple instructions on how to prepare a garden and improve the soil.

Growing Annual Flowering Plants \$.15 (Cat. No. A 1.9:1171-1/4)—Tells how to have year-round beauty in your home and garden with instructions on planting and care.

ANIMALS

Raising Rabbits \$.20 (Cat. No. A 1.9:2131) This pamphlet delves into all aspects of rabbit raising with emphasis on the commercial (rabbits for food and fur).

Hamster Raising \$.05 (Cat. No. A 1.35:250)—If you want them for pets, OK. If you want to raise them for profit, laboratories buy them. This tells you how to do it.

WRITING

U. S. Government Printing Office Style Manual (Abridged Edition) \$1.25 (Cat. No. GP 1.2:St 9/18/959/Abridged Ed.)—Probably no two publications use exactly the same style but this is an excellent general guide to punctuation, spelling, abbreviations, compounding, capitalization and other information which writers and editors find useful.

Effective Revenue Writing 1 \$1.00 (Cat. No. T22.19/2:W 93/no. 1)—This covers points which are frequent stumbling blocks in grammar and gives a writer's guide to current usage of some words and phrases.

Effective Revenue Writing 2 \$.70 (Cat. No. T 22.19/2:W 93/no. 2)—An advanced course designed to help experienced writers and reviewers diagnose and cure writing weaknesses.

AUTOMOBILES

Principles of Automotive Vehicles \$3.25 (Cat. No. D 101.11:9-8000)—A convenient reference source on automotive repair for both the amateur and professional.

COLLECTING

Postage Stamps of the United States 1847-1961 \$1.25 (Cat. No. P 4.10:961)—This provides a 232-page comprehensive review of all United States postage stamps from the first adhesive stamp issued in 1847 through the Nursing Commemorative Stamp issued in 1961.

Domestic Coins Manufactured By Mints of the United States \$.25 (Cat. No. T 28.1a:C 666/2/961)—This pamphlet provides a story of gold, silver and minor U. S. coinage through the year 1961.

Collection and Preservation of Insects \$.25 (Cat. No. A 1.38:601)—Practical information on collecting, preserving, handling, mounting and labeling insect specimens.

PHOTOGRAPHY

Basic Photography \$2.00 (Cat. No. D 301.7:95-1/2)—The theory, practice and techniques of photography.

MISCELLANEOUS

Patents and Inventions, An Information Aid for Inventors \$.15 (Cat. No. C 21.2:P 27/10)—Gives just what the name implies by providing answers to questions frequently asked about patents.

Guide for Patent Draftsmen \$.15 (Cat. No. C 21.14:D78/961)—Shows you how to prepare a plan of your invention for a patent.

SERVICSCOPE

Brief news items about other branches of the armed services.



INTER-SERVICE cooperation prevailed when this Air Force helo brought Army men to Florida to pick up equipment.

THE ARMY IS GOING to sea. *Albermarle* (AV 5), formerly in the Navy's Reserve Fleet, is being converted to an Army mobile aircraft maintenance base.

Ship's company will include about 380 soldiers, but they'll be mostly in the business of repairing aircraft. The sailing will be done by some 135 officers and enlisted men in the Military Sea Transportation Service.

The seagoing shop will perform major repairs on Army aircraft, both helo and fixed wing, wherever needed. It will serve both independently and as a back-up facility for overloaded land-based facilities overseas.

Under the present overseas Army maintenance system, many aircraft parts must be ferried back to the states for repairs. The seaplane tender, which will be equipped to repair the planes on the spot, can save much of the time and money lost in transportation.



KING SIZE—World's first 156-inch-diameter solid propellant rocket, being built for USAF, passes static test.

EVER WONDER HOW spacemen will get a closer look at objects they might find floating around up there? They might use something like an RMU for this job.

An experimental device—the initials stand for Remote Maneuvering Unit—it is designed to be launched from a manned, orbiting spacecraft to examine with television cameras objects in space.

The RMU is essentially a radio controlled detective. It is designed to be carried aloft aboard a space vehicle for use by the crew.

If something is seen floating near the spacecraft, the RMU can be dispatched to investigate. Its propulsion unit, which ejects hydrogen peroxide through gas nozzles, will allow the RMU to circle the foreign space object, taking television pictures and relaying them back to the mother craft. The RMU's movements will be controlled by the spacemen, by radio control.

When its mission is completed, the RMU will be brought back to the mother craft and readied for another scouting chore.

Developed for the Air Force, it is a compact package which weighs about 125 pounds. It is anticipated that the RMU will have useful scientific applications at present. Tests are scheduled from a specially equipped aircraft, and later in space.

★ ★ ★

ABOUT 5000 FULL-TIME language students were graduated from the Defense Language Institute during its first year of operation. For the coming year, DLI expects a total enrollment of 6500.

The Institute is a Department of the Army command and is responsible for all language training conducted in the military departments except that given at the service academies and for academic credit at civilian institutions. It is now in the process of standardizing texts and audio-visual techniques for more uniform training methods.

Language training for the U.S. Armed Forces includes four main categories: full-time foreign language training at the West Coast and East Coast branches; contract universities and commercial schools; required part-time instruction; and voluntary off-duty study. DLI also supervises English language training for foreign personnel at Lackland Air Force Base, Texas.

★ ★ ★

THE AIR FORCE might modify its F-104 *Starfighters* to make them more maneuverable because experiments and a four-month study have revealed how this could be accomplished.

Test pilots evaluated the performance of an F-104 which had a pair of strakes mounted aft and beneath the trailing edge of the fighter's wings, and reported that additional maneuvering capability was achieved in all regions of flight with no bad effects.

The recommendation to modify the planes is under consideration.

★ ★ ★

AN ARMY VERSION of a vertical take-off, lift-fan jet aircraft, the XV-5A, has successfully completed its first hovering tests. While being put through its paces at Edwards AFB in California, the aircraft rose vertically and hovered without difficulty.

The V/STOL (Vertical/Short Take-off and Landing)

plane had already performed successfully during conventional take-off and landing

The XV-5A takes off vertically, makes the transition to conventional horizontal flight, hovers, and descends straight down but slowly—for a landing.

During conventional flight the aircraft uses two J85 jet engines in the normal manner. But, while it's hovering, the jet exhaust is channeled through three ducts on the underside of the aircraft—one in each wing and one in the nose. This jet blast powers three fans, one in each duct, which give the plane lift for vertical movement and hovering.

★ ★ ★

ALASKA'S ARCTIC REGION is beckoning Air Force cold weather survival researchers to come out of their man-made refrigerators and perform their tests in a natural environment, and they are accepting the invitation.

It is difficult to simulate arctic conditions in a researcher's cold chamber for prolonged periods. A combination of natural stresses brought about by high altitude, reduced oxygen, constant cold, dry air and darkness must be reproduced and maintained.

So the Air Force is establishing an outpost on a plateau at the 13,800-foot level on Alaska's dormant volcano, Mt. Wrangell. A testing facility, including a prefabricated building, has been airlifted to the area. This will be used as a combination laboratory and living quarters for men who will begin testing new types of arctic clothing and equipment on location later this year.

Research on the physiological effects of cold weather stress on man will also be conducted. Scientists will investigate what happens to body fluids, enzymes and hormones; how much food a man needs; how much energy he expends; how well he withstands infection and disease; and the importance of physical fitness, while in Arctic environment for long periods.

★ ★ ★

KEEPING TABS on the satellites and associated debris orbiting the earth is becoming something of a problem, according to the North American Air Defense Command. There are at present about 400 ob-



ON TARGET—Army gunner fires Redeye air defense missile. At safe distance from launcher it uses own power.

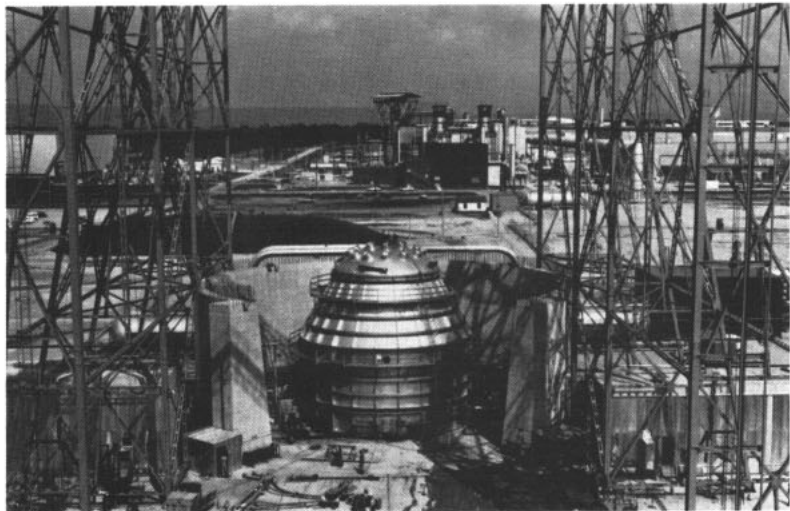
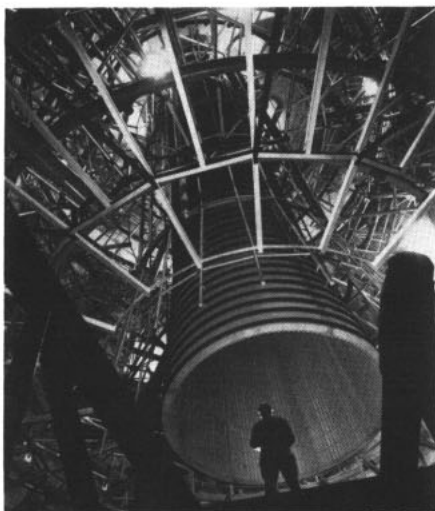
jects in orbit, and this number is expected to reach 10,000 by 1975.

Authorities claim, however, that congestion will not become a serious traffic hazard to space travelers. The number of satellites is extremely small compared to the available area.

But the orbiting hardware is of great importance at NORAD tracking stations, where men watch the skies for signs of attack by missiles. Because an oncoming ICBM could easily be mistaken for a satellite—or vice versa—all orbiting objects must be carefully charted.

The charting operation requires approximately 6000 observations each day. Information gained in this manner is fed into computers, and the objects are charted.

Of the 400 orbiting objects, about 200 are U.S. satellites. Approximately 62 are Russian, two are British, and one is Canadian. The remainder are associated junk consisting of rocket parts which orbited along with the satellites.



ROCKET TESTER—New Air Force J-4 rocket test cell. Right: rises nearly 50 feet above ground at Tullahoma, Tenn. (left) Looking up into cell's 250-ft. underground exhaust chamber. Cell can test rockets up to 500,000 pounds thrust.

Pointers on Four Programs

THE NAVY's promotion ladder offers a pathway to officer country for qualified active duty enlisted personnel. On the first rungs of the ladder we find four programs which do not include or generally require a college education:

- A reinstituted Warrant Officer Program, with plenty of opportunities;

- A revised Limited Duty Officer Program, which is going to sit for a while to give prospective candidates a chance to catch up with its new requirements;

- The Integration Program, which will again select a few applicants from the Navy's pool of enlisted talent and dispatch them on careers as unrestricted line officers; and

- The Medical Service Corps Program, for HMs and DTs.

While applications for the two most widely applicable programs should already be in the early stages of processing for this year's candidates, the details of these programs are of special interest at this time because of changes made recently. This information is directed to both

potential applicants and to division and I & E officers, who should be familiar with all programs leading to officer status and be alert to recognize and counsel individuals who possess officer potential.

One note for all applicants: Competition in the various programs is very keen, and requires preparation early in your career. You increase your chances for success by your efforts to increase your technical knowledge, through on-the-job training, specialized schools and correspondence courses.

In addition, if you're seeking appointment under the programs outlined here you should become familiar with the laws and regulations governing officer appointment, retirement and career matters, as contained in the *Officer Fact Book*, NavPers 15898.

Many applicants who have repeatedly applied for these programs have not completed a Navy correspondence or USAFI course, nor taken any steps to prepare themselves for the examination. This indicates little real motivation.

For those prepared to go for broke this year, and for those looking toward the future, here's a rundown on some special opportunities available:

- **The Integration Program**—Offers the opportunity for appointment to commissioned status to outstanding young enlisted men and women. Those selected attend Officer Candidate School and are commissioned as ensigns in the line or Staff Corps of the Regular Navy. Membership in this program is restricted to a small, select group. Selectees compete throughout their careers with Regular Navy officers from all sources. Men selected for line appointments (1100) work toward command at sea, and can expect to perform general line duties afloat which will afford them the well-rounded professional background needed to attain this. They will not continue to perform duties within the limited fields of their former ratings.

- **The Warrant Officer Program**—Recently reinstituted and revitalized, provides senior petty officers with a path to officer status within their areas of specialization. Warrant specialists primarily work in close supervision over machinery and weapons and the enlisted personnel maintaining them, in effect bridging the gap between the enlisted man and the commissioned officer. They remain within their specialization categories, and do not perform many generalized collateral duties.

There are two warrant officer programs: the Warrant Officer (Temporary) and the Warrant Officer (Permanent). All men are initially appointed to Warrant Officer, W-1 (Temporary), while women selected are appointed to Warrant Officer, W-1 (Permanent). Men may apply for permanent appointment after three years service as WO (Temporary).

- **The Limited Duty Officer Program**—Officers serving as Limited Duty Officers continue to perform as commissioned officers in the general area

Review Study Materials For Prospective Officers

Navy Texts

The United States Navy—Guardian of Our Country (OpNav Inst. 5720.17)

Naval Orientation (NavPers 16138C)

Navy Correspondence Courses

Naval Orientation (NavPers 10900)

USAFI Courses

American History I & II—The Making of Modern America

World History I & II—Man's Story

World Geography I & II—The Wide World

Economics I—Economics: An Introductory Analysis; Readings in Economics

Understanding American Government I—Our American Government; The President of the United States

American Government I & II—Government by the People; Outside Readings in American Government

Biology I & II—Modern Biology

Physics I & II—Modern Physics

Survey of Physical Science I & II—Fundamentals of Physical Science

General Science I & II—Science For Progress

General Chemistry I & II—Chemistry And You

Advanced Composition I—Guide to Modern English

General Mathematics I & II—Mathematics To Use

Beginning Algebra I & II—Algebra, Its Big Ideas and Basic Skills, Book I

Plane Geometry I & II—Plane Geometry

Trigonometry—Trigonometry

That Lead to a Commission

of their former warrant specialty or enlisted rating. Due to a revision of this program, there will be no input into the Limited Duty Officer Program after Fiscal Year 1965 until Fiscal Year 1969. When the selection process is resumed, LDOs will be appointed from the ranks of commissioned warrant officers in grades W-2 or W-3 who receive their original appointment after calendar year 1964. Detailed information concerning selection and appointment to LDO will be published at a later date.

• **The Medical Service Corps Program**—This is a continuing program, with requirements varying within the various categories of the MSC, providing a path for advancement to officer status for qualified HMs and DTs. BuPers Inst. 1120.15 series gives the details.

There is no path to Medical Service or Dental Service warrant ranks. HMs and DTs who want to be considered for the Warrant Officer Program may apply in any area, other than medical and dental, in which they consider themselves qualified. They should remember, however, that they must compete for selection with others who have had many years of practical experience within that technical field. HMs and DTs are encouraged to participate in the MSC Program under the provisions of the above instruction.

The Warrant Officer Program now generally provides the greatest opportunities for active duty enlisted personnel seeking appointment to officer grades. A feature to be considered: some candidates are eligible for application to both the Warrant Officer and Integration Programs simultaneously. An applicant to these programs must meet the following general eligibility requirements:

- Be a U. S. citizen.
- Be physically qualified in accordance with standards contained in the *Manual of the Medical Department*.
- Have no record of conviction

by general, special or summary court-martial, nor conviction by civil court for any offense other than minor traffic violations, for the two-year period preceding 1 July of the calendar year in which application is made.

- Women must meet the dependency requirements as set forth in *BuPers Manual*, Art. C-1102 (2).

- Applicants must not have applied in more than two officer designator codes in a given year.

From here eligibility requirements vary in the two programs. They are listed in the qualifications reported on the following pages.

Warrant Officer Program

Source: Enlisted members of the Regular Navy serving as petty officer first class and above. PO1s must have served for at least one year in pay grade on 1 July of the year in which application is made.

Age: Must be at least 23 years old but may not have reached 39th birthday as of 1 July of the calendar year in which application is made. (Note: It is expected that the maximum age requirement will be reduced to 29 after Fiscal Year 1969.)

Service: Must have completed six years but not more than 20 years of
(Continued on page 35)

Paths of Progression for Senior and Master CPOs

On the following pages are charts showing the paths of progression and occupational designations for chief petty officers at the E-7/E-8/E-9 paygrades. The charts also include revisions to categories and paths of progression for Warrant Officer and Limited Duty Officer categories as recommended by the Permanent Board for the Review of the Enlisted Rating Structure, and approved by the Secretary of the Navy. Here is a brief summary of their report:

- The paths of progression established for the Senior Chief and Master Chief Petty Officer paygrades are designed to reflect progressively higher levels and scopes of authority and responsibility. Where occupational content was found to be closely related, general ratings (61 at the E-7 level) were combined at the E-8 or E-9 levels to form broader occupational fields.

An example of this concept is the combination of the Senior Chief Instrumentman and the Senior Chief Opticalman to form the Master Chief Precision Instrumentman.

These rating combinations have resulted in fewer total number of general ratings at the E-8 level

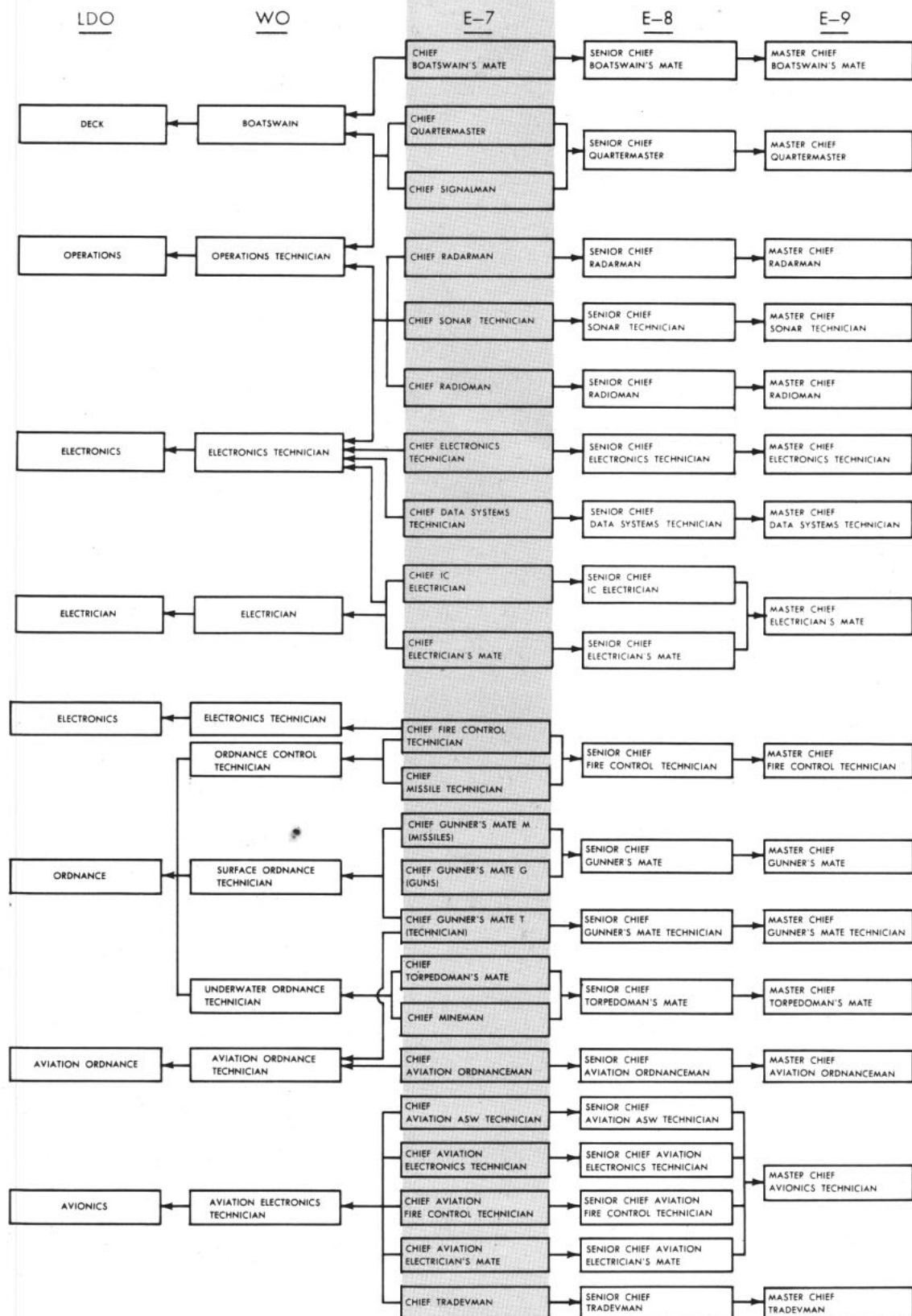
(60) and still fewer at the E-9 level (46).

This revised structure includes the following six new rating titles at paygrade E-9: (1) Master Chief Steam Propulsionman (SPCM), (2) Master Chief Aircraft Maintenceman (AFCEM), (3) Master Chief Avionics Technician (AVCM), (4) Master Chief Precision Instrumentman (PICM), (5) Master Chief Constructionman (CUCM), and (6) Master Chief Equipmentman (EQCM).

- The following Warrant Officer categories are being established: (1) Aviation Boatswain, (2) Aviation Control Technician, and (3) Air Intelligence Technician. Mine Warfare Technician is being absorbed by the Underwater Ordnance Technician and the Aviation Operations Technician is being replaced by Aviation Boatswain.

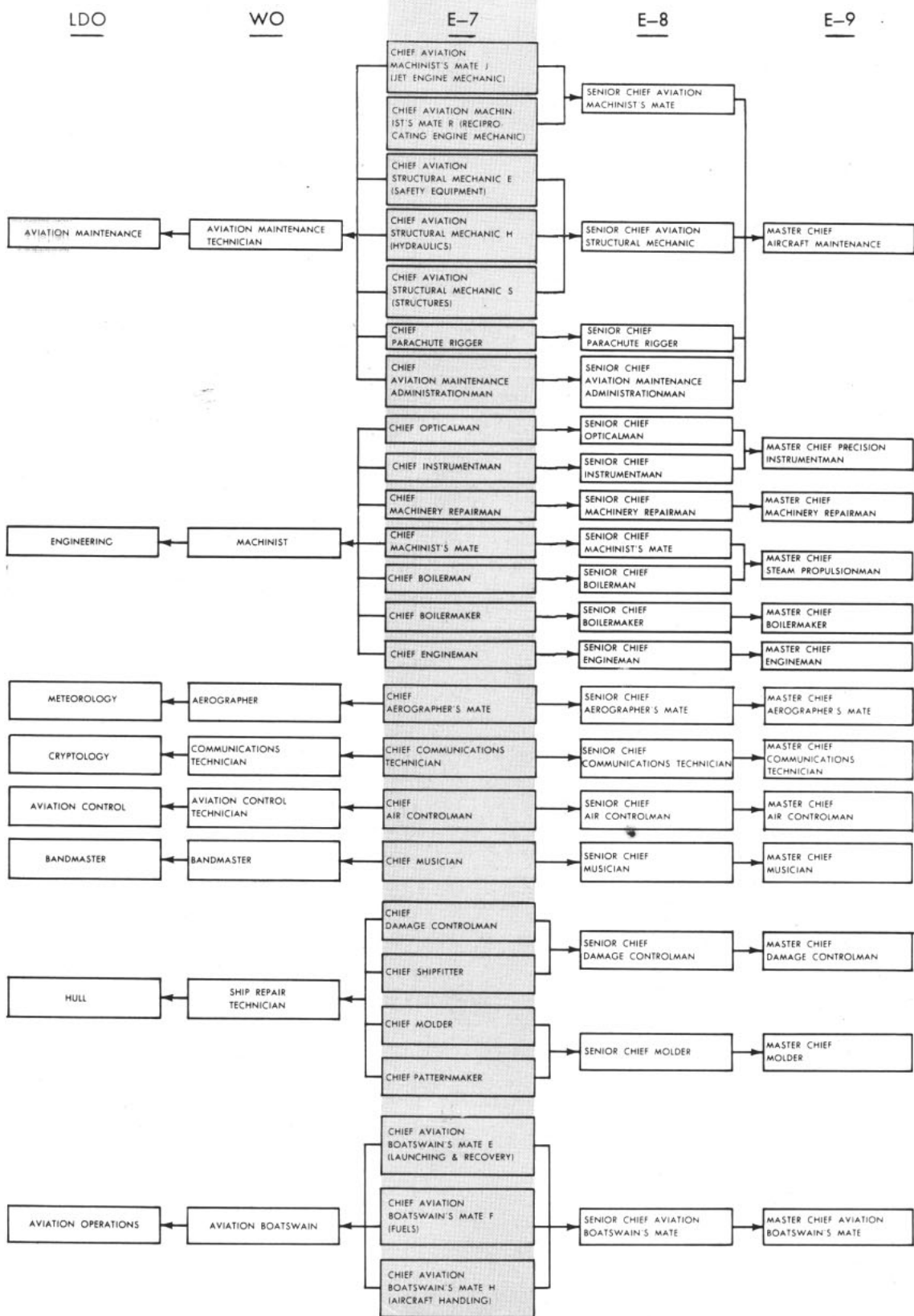
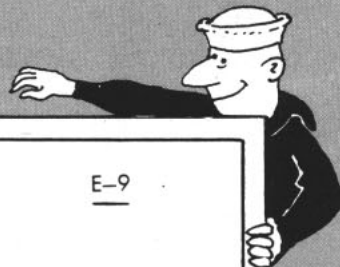
- The following new LDO categories are being established: (1) Aviation Control, (2) Air Intelligence, and (3) Ordnance. The latter category absorbed the Surface Ordnance, the Control Ordnance, and the Underwater Ordnance categories, which are being disestablished.

AT THE CROSSROADS



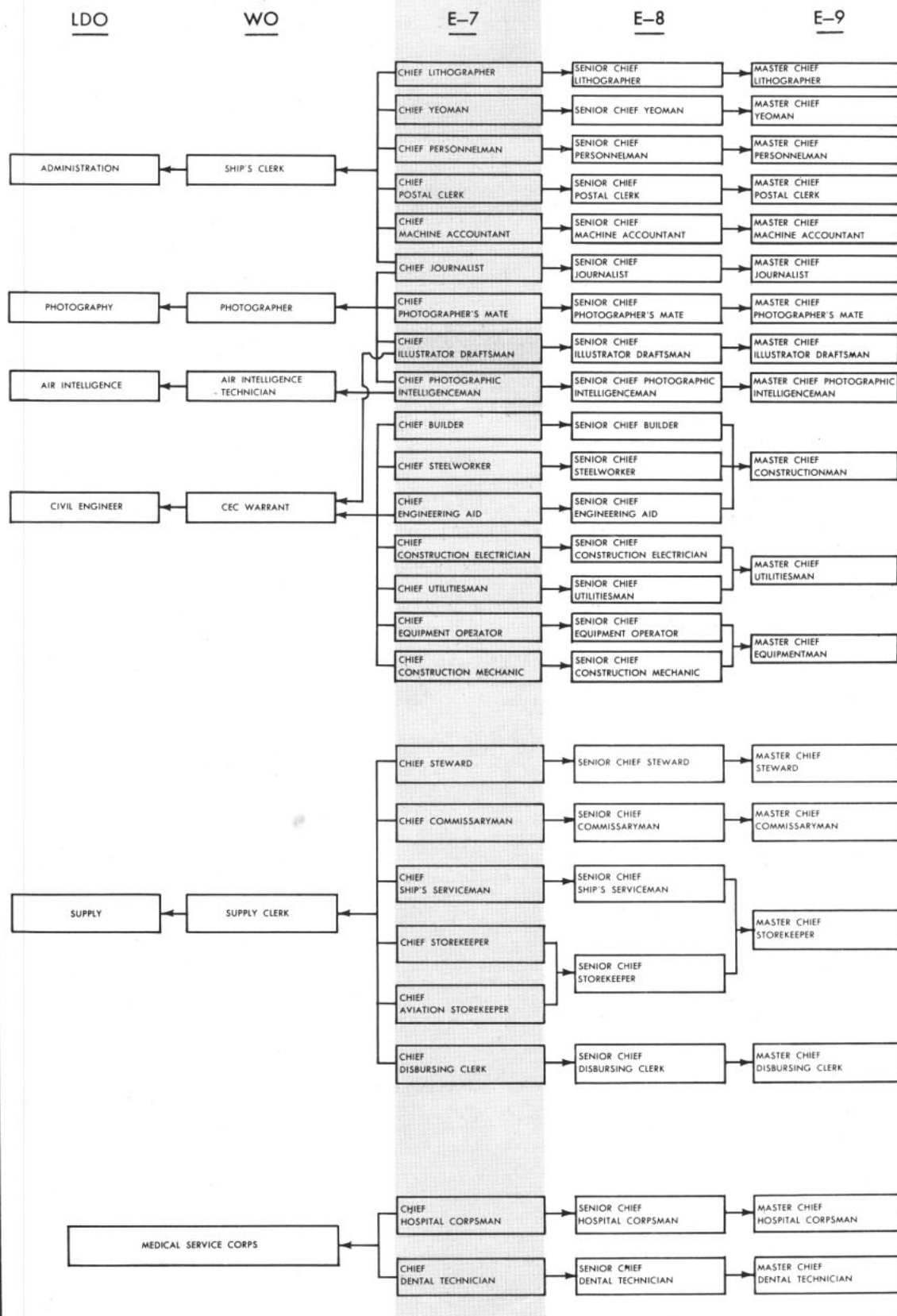
when you make chief today, many paths of opp

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Opportunity are open-- here's a guide to your future

AT THE CROSSROADS . . .



when you make chief today, many paths of opportunity are open--here's a guide to your future



(Continued from page 31)
active naval service (including time in the Marine Corps and Coast Guard when operating as part of the Navy), exclusive of active duty for training in the Naval, Marine Corps or Coast Guard Reserve, on 1 July of the calendar year in which application is made. (Note: It is expected that the maximum service requirement will be reduced to 12 years after Fiscal Year 1969.)

Applicants must be serving in the Regular Navy on the date of written examination.

Education: Must be a high school graduate or possess the service-accepted equivalent of a high school education.

Must be recommended by the commanding officer.

All petty officers first class are required to have completed all practical factors, training courses, and performance tests for CPO and to pass the E-7 examination for the rating in which serving at the time of application for warrant officer. The E-7 exam will be administered in February following application, at the same time and with the annual Navy-wide E-7 exams.

Integration Program

Source: Enlisted personnel serving in pay grade E-4 and above in the Regular Navy.

Age: Men applicants must be at least 19 and under 25 years old as of 1 July of the calendar year in which application is made. Women applicants must be at least 20 and under 25. Requests for waivers up to 30 years of age will be considered for women when recommended by the commanding officer.

Service: All service computed for eligibility purposes must be continuous and in the Regular Navy, covering that period immediately preceding the submission of the application, computed to 1 July of the calendar year in which application is made. (Broken service in excess of 90 days is disqualifying and computation of Naval Reserve time is not authorized under the current provisions of law.)

Education: Applicants must meet one of the following requirements:

(1) Have successfully completed 30 semester hours of work at an accredited college or university, or

have the service-accepted equivalent.

(2) Be a high school graduate (or the service-accepted equivalent) and have a GCT or ARI score of 60 or above. (High school transcripts are required with application.)

(3) Civil Engineer Corps appli-

cants must have completed three years of college credits toward an engineering degree at an accredited engineering school.

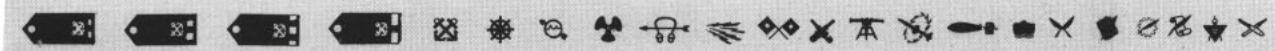
Candidates must be recommended by the commanding officer and are not eligible if they have been con-

Normal Path of Advancement

ENLISTED RATING	WARRANT OFFICER CATEGORY AND DESIGNATOR	LDO CATEGORY AND OFFICER DESIGNATOR
SD, CS, SH, SK, AK, DK	Supply Clerk (798X)	Supply (370X)
DM* BU, SW, EA, CE, UT EO, CM, CUCM, EQCM	Civil Engineer Corps (849X)	Civil Engineer (570X)
BM, QM* SM*	Boatswain (713X)	Deck (600X)
QM* SM* RD* ST* RM*	Operations Technician (714X)	Operations (601X)
GMM, GMG, GMT* GM	Surface Ordnance Technician (723X)	Ordnance (615X)
FT* MT	Ordnance Control Technician (724X)	
TM, MN	Underwater Ordnance Technician (733X)	
LI, YN, PN, PC, MA, JO*	Ship's Clerk (782X)	Administration (620X)
MU	Bandmaster (785X)	Bandmaster (626X)
OM, IM, MR, MM, BT, BR EN, PICM, STCM	Machinist (743X)	Engineering (630X)
DC, SF, ML, PM	Ship Repair Technician (744X)	Hull (635X)
IC* EM*	Electrician (754X)	Electrician (637X)
RD* ST* RM* ET, DS, EM*	Electronics Technician (766X)	Electronics (640X)
IC* FT*	**Communications Technician (764X)	Cryptology (646X)
CT		
ABE, ABF, ABH, AB	Aviation Boatswain (760X)	Aviation Operations (660X)
JO* PH, DM* PT*	Photographer (831X)	Photography (663X)
AG	Aerographer (821X)	Meteorology (665X)
AO, GMT*	Aviation Ordnance Technician (721X)	Aviation Ordnance (670X)
AX, AT, AQ, AE, TD AVCM	Aviation Electronics Technician (761X)	Avionics (680X)
ADJ, ADR, AME, AMH, AMS PR, AZ, AD, AM, AFCM	Aviation Maintenance Technician (741X)	Aviation Maintenance (685X)
AC	Aviation Control Technician (745X)	Aviation Control (661X)
PT*	Air Intelligence Technician (762X)	Air Intelligence (662X)

* Normal Path in more than one category

**Only CT ratings may apply in these categories



THE BULLETIN BOARD

NESEP Stands for One of the Greatest Opportunities of All

IF YOU'RE a petty officer (man or woman) on active duty, your chances for a Navy commission may be better than you think. Under NESEP—the Navy Enlisted Scientific Education Program—you may be able to qualify for an unrestricted line commission.

With an uninterrupted four-year education in designated colleges and universities, you can earn a baccalaureate degree in science, engineering or mathematics. Having received your degree, you are ordered to 16 weeks at the Officer Candidate School.

When you receive your commission, your obligation will be for from four to six years depending upon the time required to obtain your baccalaureate degree.

Here are the qualifications you have to meet. Check yourself against them and see how you do.

- You must be a high school graduate between 21 and 25 years old.

- *You must be a high school graduate* or have completed three years of high school and possess a sufficiently high GED score (75th percentile) in each area. A desirable high school background includes four units of English, two and one-half to three units of mathematics and two or three units in physics, chemistry or biology.

- Your GCT plus ARI basic battery must be at least 118.

- You must be physically qualified. Minimum vision up to 20/100 each eye will be waived if it is correctable to 20/20 with standard lens and if there is no organic or progressive disease present. No other waivers will be considered.

- You must be a petty officer at the time of application.

- A conviction by either court-martial or civil court during the two-year period preceding your application will disqualify you, unless it was for a minor traffic violation.

- You must be recommended by your commanding officer.

A most important eligibility factor is your record of educational activity since entering the Navy. If your service record shows you have been spending your free time in construc-

tive learning through correspondence courses or after-hours schooling, it makes sense that you'll be a pretty good bet as a full-time student. (Incidentally, if you enrolled in a college before entering the Navy and left with academic failures or a poor record, it would be mighty important, if not downright necessary for you to have evidence of constructive educational activity since then.) Higher math courses are particularly desirable.

NESEP schooling consists of regular academic and summer sessions in three primary areas; engineering, science and mathematics. Engineering majors include aeronautical, chemical, electrical, mechanical, metallurgical, nuclear and engineering physics.

In the sciences you can major in physics, nuclear physics, chemistry, meteorology and oceanography. All math majors, including systems analysis, must be approved by the Chief of Naval Personnel.

Your major, which is not approved until late in your sophomore year, is based on the recommendations of the university and its Professor of Naval Science.

While at school you may advance in rate in the normal manner; the only exception is that completion of practical factors and performance tests for advancement are waived for you. You remain an enlisted man (or woman) while enrolled as a NESEP scholar, and may not apply for any other in-service officer procurement program.

Your NESEP education will not last more than four consecutive years; this counts as a normal tour of shore duty. Normally, instruction does not continue once you've earned your baccalaureate; it may not take you four years if you have previous credits. (If you enroll with valid,

and applicable, credits from other schools, you may be admitted with an advanced standing.)

If you are eligible for NESEP and wish to apply, BuPers Inst. 1510.69H outlines the procedure. Your letter application, following a standard format shown in the instruction, must reach the Chief of Naval Personnel no later than 1 November. Reports of your medical examination must accompany your application. (Before you are accepted into the program, your physical qualifications must be determined.)

You must obtain transcripts of any previous high school and college credits to accompany your application. (A note of caution: Any effort to conceal an academic record is considered disqualifying by all universities. It is necessary, therefore, for you to obtain transcripts for all periods of attendance in secondary or higher level schools, even if you were there less than a full semester.)

Another enclosure that must accompany your application is a handwritten statement (not more than one page) outlining your reasons for wanting to participate in NESEP. You must include in this statement your reasons for leaving any college you may have attended.

You'll then be interviewed by a board of three officers, appointed by your commanding officer. They will consolidate their evaluation of you, which will weigh heavily either for or against your selection. Next you talk with your CO; in turn he'll recommend you for NESEP only if he sees in you a good moral character, a motivation for career officer status, and academic potential. His recommendation will be in the form of an endorsement to your application.

Your next step up the NESEP ladder is a written examination. (NESEP exams are administered Navy-wide, to all applicants on the second Monday in November. Sample question: The vertex angle of an isosceles triangle exceeds each base angle by 30 degrees. Find the number of degrees in each angle of the triangle. The correct answer, taken from four possibilities: 50 degrees,

WATCH THAT DEADLINE!

Your NESEP application must reach the Chief of Naval Personnel by 1 November of this year.

50 degrees, 80 degrees.)

If you get as far as the exam and it doesn't slow you down, you're ready to be selected. The major considerations that go into your selection are based upon your service record, previous educational endeavor, CO's recommendation and your exam score. Final NESEP selections are made during February of the year of college entrance.

If selected, you will be issued orders in plenty of time to report to the Naval Preparatory School at Bainbridge, Md., or the Service School Command in San Diego. There you'll have nine weeks of math, physics, chemistry, English usage and orientation in college academic requirements. This training is given during the summer.

Here, too, you are interviewed; a field of study is assigned and a college or university is designated. Before you leave prep school you are discharged and reenlisted in the Regular Navy for a period of six years. (You reenlist in the usual manner in the rating you held at discharge. If you've shipped over for six years recently, you'll be permitted to extend your enlistment one or two years to acquire the necessary six years of obligated service.) Upon successful completion of the prep school and acceptance by a university, you're then ordered to the designated university to start your education in the fall term.

Each year you'll be given a physical examination to make sure you're still in shape. If you are found no longer physically qualified for a line commission, you may still be retained for an appointment in the restricted line or staff corps.

Physical unsoundness isn't the only way to be dropped from NESEP. The Bureau will see to it that you are disenrolled if your academic performance is low, or if you generally don't meet officer aptitude standards.

In any case, if you should be disenrolled, you would return to the Fleet in the rate and pay grade you hold at the time, and complete your enlistment.

At the end of your second year of studies, you must agree to extend your enlistment for an additional two years. Thus, by the time your school hitch is up, you will have the necessary four years' obligated service mentioned earlier.

All-Navy Cartoon Contest S. R. Rodriguez, RMSN, USN.



"No, Son, your dad is not a one-star general."

The complete NESEP picture is described in BuPers Inst. 1510.69H with such aids as sample application form, study guides and the CO's check-off list attached.

DIRECTIVES IN BRIEF

This listing is intended to serve only for general information and as an index of current Alnavs, BuPers Instructions, BuPers Notices, and SecNav Instructions that apply to most ships and stations. Many instructions and notices are not of general interest and hence will not be carried in this section. Since BuPers Notices are arranged according to their group number and have no consecutive number within the group, their date of issue is included also for identification purposes. Personnel interested in specific directives should consult Alnavs, Instructions and Notices for complete details before taking action.

Alnavs apply to all Navy and Marine Corps commands; BuPers Instructions and Notices apply to all ships and stations.

All-Navy Cartoon Contest William R. Maul, CTCA, USN.



"Boy, there's one who has it written all over him!"

Alnavs

No. 23—Announced convening of fiscal year 1965 selection boards to recommend line officers in the grade of commander on active duty (except TARs) for promotion to the grade of captain.

No. 24—Discussed Department of Defense policy in regard to Navy Department participation in public meetings.

No. 25—Announced that the Secretary of Defense had designated the period 20 through 25 July as defense cost reduction week.

No. 26—Announced approval by the President of reports of selection boards which had recommended Marine Corps officers for promotion to the grades of major general and brigadier general.

No. 27—Announced approval by the Secretary of the Navy for the President the report of a selection board which recommended line officers for temporary promotion to the grade of captain.

No. 28—Announced that the Military Pay Bill had been signed by the President and stated that its effective date was 1 September.

No. 29—Announced approval by the Secretary of the Navy for the President the report of a selection board that recommended Marine Corps officers for temporary promotion to the grade of colonel.

No. 30—Announced approval by the Secretary of the Navy for the President the report of a selection board which recommended women officers for temporary promotion to the grade of commander.

Instructions

No. 1220.6C—Defines the conditions under which active duty enlisted personnel may be retested with the Basic Test Battery without earlier approval of the Chief of Naval Personnel, establishes procedures for retesting and outlines the methods to be used in recording and reporting test results.

Notices

No. 1710 (7 August)—Discussed the need to solicit voluntary contributions for the 1964 Olympic Games.

No. 1710 (12 August)—Provided information concerning the 1965 All-Navy and Interservice Sports program.

No. 1110 (25 August)—Announced the annual nationwide competition for appointment as Cadet in the United States Coast Guard.

What You Should Know About BTB—the Basic Test Battery

THE SCORES you obtained on the Navy basic test battery—that series of aptitude tests you took in boot camp—determined your GCT, ARI, MECH and CLER scores which are entered in your service record. The primary purpose of the BTB was to help determine your eligibility to attend class "A" school after recruit training, but these scores remain in your record and are referred to when you apply for schooling or other special programs throughout your naval career.

Under certain circumstances you might warrant an opportunity to retake the BTB with a view toward improving your scores. This provision is not new, nor is it an open invitation to take another crack at the BTB when you would not stand to gain anything. But permission may be granted when you have a valid reason for wishing to retake the tests, such as:

- Your scores do not qualify you for a specific school or program you wish to enter (considering any waivers allowed); or
- You have substantially increased your general aptitude through study and work experience since taking the BTB.

Previously, all requests to retake the BTB had to receive BuPers approval. A recent change in policy now permits various field commands to process certain types of these requests, thus speeding up the processing time.

If you have a reason, such as described above, and feel you might benefit from a retest, you can apply through your command to one of the designated retest centers, providing you meet three other conditions:

- You are a high school graduate or the equivalent;
- You took your first BTB at least two years ago and can show evidence of subsequent self-improvement—in general education, language proficiency or other experience;
- You are a petty officer and have not taken the BTB more than once.

If you don't meet the above qualifications but still feel there is reason for you to request a retest, then you must direct your request to the Chief of Naval Personnel.

If you are not clear in your mind as to your future course of action why don't you, if opportunity and

geography permit, stop in and discuss your problem with one of the experts at any one of the Enlisted Classification Units listed below?

However, before you take any drastic steps, keep these points in mind:

- You are allowed only one retest. Don't waste it.
- Some people score lower the second time around—and the new scores are the ones that will be recorded.
- You must take the entire Basic Test Battery during a retest, not just the one section in which you didn't do so well.
- Because these scores give only a broad indication of your aptitudes, the requirements set for many schools and programs are the general rule rather than the hard and fast rule, and many times waivers will be granted for lower scores. You may not require a retest.

Also, there is a new test battery being administered in the Fleet, called the Advanced Technician Test (ATT). It is anticipated that cutting scores for various types of advanced training for Navymen will eventually be based on the ATT.

Designated retest centers where requests can be forwarded are as follows:

Naval District Headquarters: First, Eighth, 10th, 13th, 15th and 17th Naval Districts. OCS, Newport, R. I.

Naval Training Centers: Bainbridge, Md.; Great Lakes, Ill.; and San Diego, Calif.

Naval Receiving Stations: Brooklyn, N. Y.; Norfolk, Va.; Philadelphia, Pa.; and San Francisco, Calif.

Naval Air Station, Glynco, Ga.

Naval Stations: Charleston, S. C.; Washington, D. C.; Long Beach, Calif.; San Diego, Calif.; Guam, M. I.; Guantanamo Bay, Cuba; Pearl Harbor, Hawaii; Rota, Spain; and Subic Bay, P. I.

Fleet Activities, Sasebo, Japan.

Headquarters Support Activities, Yokosuka, Japan.

Medical Research Lab, SubBase, New London, Conn.

Chief Naval Air Basic Training, Pensacola, Fla.

Chief Naval Air Advanced Training, Corpus Christi, Texas.

Chief Naval Air Reserve Training, Glenview, Ill.

Naval Air Technical Training Center, Memphis, Tenn.

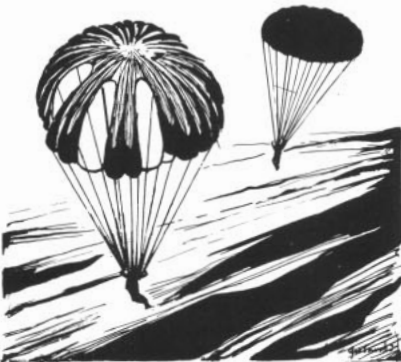
Naval Air Technical Training Unit, Jacksonville, Fla.

Further details on the basic battery tests may be found in BuPers Inst. 1220.6C of 5 Aug 1964.

WHAT'S IN A NAME

They Know Geronimo

Most people feel that airplanes are made to fly you from one point to another, but flying for Benny Trotter, John Beattie and Sam Wooley—PR1, 2 and 3 respectively—is a means to another end. They seldom land in the plane they go up in.



The trio has made 444 parachute jumps testing new and modified parachutes and skydiving.

They are currently packing parachutes for the aviator's equipment branch of Utility Squadron One at NAS Barber's Point, Hawaii. Do they trust their own work? Look at these statistics and decide for yourself:

Trotter has a total of 246 jumps, of which 233 were made while testing new and modified parachutes at the Naval Parachute Unit, El Centro, Calif. He has made jumps with Army Airborne units, sport (skydiving) jumps, and one at the completion of PR class "A" school.

Beattie has hit the silk 65 times. His first was the jump at the completion of PR class "A" school, and the other 64 were made with the Naval Parachute Unit.

Wooley made 133 jumps, most of them with the Army 77th Special Forces, and, of course, one at the completion of Navy PR school.

Do they yell "Geronimo?" Just as our interviewer was about to ask them, they disappeared out the door of the plane.

Table of Active Duty Service Pay Under New Law

MONTHLY BASIC PAY (BASED ON CUMULATIVE YEARS OF SERVICE, ACTIVE AND INACTIVE)

RANK OR PAY GRADE	Under 2 years	Over 2 years	Over 3 years	Over 4 years	Over 5 years	Over 6 years	Over 7 years	Over 8 years	Over 9 years	Over 10 years	Over 12 years	Over 14 years	Over 16 years	Over 18 years	Over 20 years	Over 22 years	Over 24 years
O-10 Admiral	\$1,302.00	\$1,347.90	\$1,347.90	\$1,347.90	\$1,347.90	\$1,347.90	\$1,399.20	\$1,399.20	\$1,506.90	\$1,506.90	\$1,614.30	\$1,614.30	\$1,722.00	\$1,722.00	\$1,829.70	\$1,829.70	\$1,937.40
O-9 Vice Admiral	1,153.80	1,183.80	1,209.60	1,209.60	1,209.60	1,209.60	1,240.20	1,240.20	1,291.50	1,291.50	1,399.20	1,399.20	1,506.90	1,506.90	1,614.30	1,614.30	1,722.00
O-8 Rear Admiral (upper half)	1,045.20	1,076.40	1,101.90	1,101.90	1,101.90	1,101.90	1,183.80	1,183.80	1,240.20	1,240.20	1,291.50	1,347.90	1,399.20	1,455.60	1,511.90	1,568.20	1,624.50
O-7 Rear Admiral (lower half)	868.20	927.60	927.60	927.60	968.70	968.70	1,025.10	1,025.10	1,076.40	1,076.40	1,183.80	1,266.00	1,266.00	1,266.00	1,266.00	1,266.00	1,266.00
O-6 Captain	643.20	707.40	753.30	753.30	753.30	753.30	753.30	753.30	779.10	779.10	804.60	850.80	850.80	850.80	850.80	850.80	850.80
O-5 Commander	514.50	604.80	645.90	645.90	645.90	645.90	666.30	666.30	702.00	702.00	748.20	794.40	794.40	794.40	794.40	794.40	794.40
O-4 Lieutenant Commander	434.10	528.00	563.70	563.70	563.70	563.70	599.70	599.70	640.50	640.50	676.50	707.40	738.00	758.40	758.40	758.40	758.40
O-3 Lieutenant	353.70	450.90	481.80	481.80	481.80	481.80	533.10	533.10	579.00	579.00	609.90	640.50	656.10	656.10	656.10	656.10	656.10
O-2 Lieutenant (Junior Grade)	281.40	384.30	461.40	476.70	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90	486.90
O-1 Ensign	241.20	307.50	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30	384.30
O-3-E*				533.10	558.60	579.00	609.90	640.50	676.50	676.50	676.50	676.50	676.50	676.50	676.50	676.50	676.50
O-2-E*				476.70	486.90	502.20	528.00	548.40	563.70	563.70	563.70	563.70	563.70	563.70	563.70	563.70	563.70
O-1-E*				384.30	410.10	425.40	440.70	456.00	471.30	471.30	471.30	471.30	471.30	471.30	471.30	471.30	471.30
W-4 Chief WO	361.20	440.70	440.70	450.90	471.60	492.00	512.40	548.40	573.90	594.60	609.90	630.30	650.70	671.10	691.50	711.90	732.30
W-3 Chief WO	328.50	405.00	405.00	410.10	415.20	445.80	471.60	486.90	502.20	517.50	533.10	553.50	573.90	594.30	614.70	635.10	655.50
W-2 Chief WO	287.40	353.70	353.70	363.90	384.30	405.00	420.30	435.60	450.90	466.20	481.50	496.80	512.10	527.40	542.70	558.00	573.30
W-1 WO	238.20	312.60	312.60	338.40	353.70	369.00	384.30	399.60	414.90	430.20	445.50	460.80	476.10	491.40	506.70	522.00	537.30
E-9 Master CPO							374.10	445.80	456.00	466.20	476.40	486.60	496.80	507.00	517.20	527.40	537.60
E-8 Senior CPO							324.10	384.30	394.50	404.70	414.90	425.10	435.30	445.50	455.70	465.90	476.10
E-7 CPO	206.39	282.00	292.20	302.40	312.60	322.80	333.00	343.20	353.40	363.60	373.80	384.00	394.20	404.40	414.60	424.80	435.00
E-6 PO 1	175.81	246.00	256.20	266.40	276.60	286.80	297.00	307.20	317.40	327.60	337.80	348.00	358.20	368.40	378.60	388.80	399.00
E-5 PO 2	145.24	215.40	225.60	235.80	246.00	256.20	266.40	276.60	286.80	297.00	307.20	317.40	327.60	337.80	348.00	358.20	368.40
E-4 PO 3	122.30	184.50	194.70	204.90	215.10	225.30	235.50	245.70	255.90	266.10	276.30	286.50	296.70	306.90	317.10	327.30	337.50
E-3 SN, FN, AN, CN, TN, HN, DN	99.37	148.50	159.00	169.20	179.40	189.60	199.80	209.90	219.90	229.90	239.90	249.90	259.90	269.90	279.90	289.90	299.90
E-2 SA, FA, AA, CP, TA, HA, DA	85.80	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00	123.00
E-1 (Over 4 months), SR, etc	83.20	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80	112.80
E-1 (Under 4 months), SR, etc	78.00																

*Commissioned officers who have been credited with more than four years' active service as enlisted members.

ALL HANDS Magazine

October 1964

The 1964 military pay raise was signed into law by the President on 12 August and became effective 1 September. The new pay scales apply both to Regular Navymen and to Reservists on active duty or active/inactive duty for training.

Naval Academy midshipmen, aviation cadets and

Regular NROTC students are also included.

In the past, most pay bills covered retired men as well as those on active duty, but this one does not. Only those Navymen who retire or enter the Fleet Reserve after 1 Sep 1964 will receive any benefit from the new pay rates.

If You Want to Drive Your Car on Base, You'll Need Full Insurance Coverage

Stand by for a tightening of the regulations which cover the admittance of privately owned automobiles into Navy shore installations. Your car may be turned back at the gate.

If you have auto liability insurance coverage limited only to your base, it's not enough. Now, if you want to drive and park your car on a Navy installation, you must have off-base coverage as well.

However, there's no need for you to get a new policy immediately if you have the station-only type insurance; you may have a one-year grace period (from 1 Aug 1964) before you must have a new policy. Here's how this grace period will work:

When your present insurance ex-

pires, you must have a new policy that meets the requirements (see be-

All-Navy Cartoon Contest
James R. Branum, CT1, USN.



"To get ahead in this man's Navy, you have to know the right people; let's go down to the galley and I'll introduce ya to the cooks."

low) of SecNav Inst. 5560.1C. But you must have a new policy by 1 Aug 1965 no matter when your old one expires.

The Navy can't require you to buy auto insurance, but it can—and will—refuse you permission to bring your car on the base if you don't have it.

This ruling applies if you wish to drive or park your car within the confines of any U. S. shore installation. (If you are stationed outside the continental U. S., the instruction will apply to you when you return stateside.)

Here's a brief list of the requirements you should keep in mind when it's time for you to buy some new insurance.

- The company must be licensed in the state where you are stationed, homeported or presently residing. (This gives you a little leeway if

you live in one state and work in another. It also applies if you're transferred to another installation in another state, just as long as the insurer is licensed in the state where you bought the policy.)

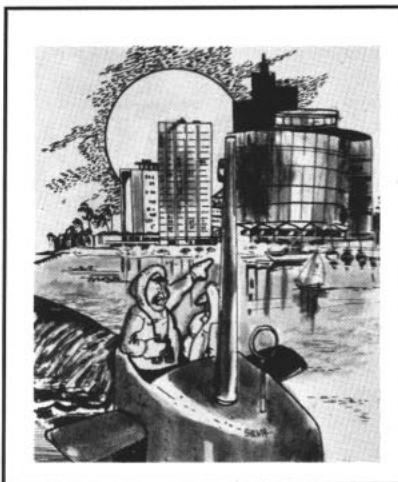
- You'll need the minimum amount of insurance that the state where you're stationed (or residing) prescribes by law. (This, of course, varies from state to state, so check with your commanding officer if you don't already know.)

- The insurance must provide bodily injury and property damage liability coverage for all persons authorized to drive your car. (The persons whose names are on your policy may be the only ones covered when driving your car. If you let your buddy use your car, even though you signed a memo saying he has your permission, your insurance doesn't necessarily cover him.)

- You must have coverage for all passengers, if this is part of the state's law.

- There can be no territorial limitations, such as station-only coverage. However, a policy that insures you only in the United States and Canada is acceptable.

All-Navy Cartoon Contest
Leslie R. Silva, PN3, USN.



"Go get that hotshot navigator—I want him to be one of the first to see the North Pole!"

Once you have your new policy, you'll be issued a permanent type permit (if you don't have one already) which will avoid the necessity of giving you a pass each day to get your car on base. If you receive such a base sticker, it will be furnished at no cost to you.

To keep you abreast of your state's

car insurance laws, your commanding officer will provide counseling on insurance buying and periodically publish information regarding your responsibilities.

If you're in pay grade E-3 or below, an officer qualified to explain the local insurance laws and regulations will counsel you when first reporting on a base, and again when you plan to buy a car.

He'll point out that judgments rendered against you as the result of an automobile accident could cost the major portion of your earnings for many years. Without insurance, you may not be able to settle claims promptly on your own, and may very well put your family and yourself under a severe financial strain.

Once you meet the insurance standards, your CO may occasionally require you to produce evidence that your insurance is still in force. (A note of caution: One of the conditions an insurance agency must meet when applying to your CO for accreditation is an agreement to notify him when your insurance terminates.)

Perhaps the best way to select an auto insurance company is to ask

This Question Keeps Coming Up

- **BAQ ENTITLEMENT**—There are occasions when you and your family can temporarily occupy government quarters and remain entitled to your BAQ (Basic Allowance for Quarters). The conditions governing this situation are explained in SecNav Inst. 7220.49.

Essentially, you remain entitled to BAQ when you and your dependents occupy government quarters under the following circumstances:

- When you are in a duty or leave status incident to a permanent change of station and your temporary stay in government quarters is 30 consecutive days or less at one location;

- When you are on leave not involving a permanent change of station and your stay is seven consecutive days or less at one location.

Government quarters in this case includes guest houses and public quarters. It does not include rental housing, inadequate public quarters or transient family accommodations; you do not forfeit your BAQ when staying in these types of places.

There are two exceptions to the general rule. First, you are not entitled to BAQ during temporary occupancy of government quarters while on leave if you continue to occupy the same public quarters you occupied at your permanent duty station before detachment.

Second, if you are staying in government quarters as a guest of another family, this does not affect your entitlement to BAQ—you can still receive it.

If your stay in government quarters while on leave exceeds the 30- or seven-day period prescribed, you remain entitled to receive BAQ for the maximum period, but you will forfeit it for any additional period.

This instruction also reflects a change in the rules governing the type of government quarters you may occupy at your permanent or temporary duty station, while remaining entitled to BAQ. This applies to officers in the following circumstances:

- At your permanent station, when adequate quarters are not

available for your dependents and you yourself are permitted or required to occupy government quarters;

- When you are at a temporary station away from your permanent station.

The old rule stated that to remain eligible to receive BAQ in the above circumstances, you must stay in a one-room and bath accommodation. This rule has now been made more flexible, allowing you to stay in quarters that do not exceed the minimum requirements of those prescribed for your grade. However, if the only quarters available exceed the minimum standards, you can occupy the larger quarters—but you'll probably have to share them.

Provision is also made for senior officers, on official or diplomatic assignment outside the U. S., to occupy quarters which exceed the minimum standards for their grade if normal quarters are not available. This may occur when the officer is required to entertain officials of foreign governments.

your insured shipmates who drive their cars under similar circumstances.

If you learn beforehand how quickly the company comes through with assistance when policyholders have accidents, it may save you long delays without a car when, or if, you should have an accident.

Also, your commanding officer can give you a list of agents who are authorized to sell policies for cars driven on your base. But, he cannot recommend one agent in preference to another.

A complete discussion on this subject is contained in SecNav Inst. 55-60.1C.

List of New Motion Pictures Available to Ships and Overseas Bases

The latest list of 16-mm feature movies available from the Navy Motion Picture Service is published here for the convenience of ships and overseas bases.

Movies in color are designated by (C) and those in wide-screen processes by (WS).

Muscle Beach Party (2698) (C) (WS): Comedy; Frankie Avalon, Annette Funicello.

Panic Button (2699) (WS): Comedy; Maurice Chevalier, Jayne Mansfield.

The New Interns (2700): Drama; Michael Callan, Dean Jones.

A Tiger Walks (2701) (C): Drama; Brian Keith, Vera Miles.

Affairs of Susan (2702): George Brent, Joan Fontaine (Re-Issue).

Take A Letter Darling (2703): Rosalind Russell, Fred MacMurray (Re-Issue).

When Irish Eyes are Smiling (2704): June Haver, Dick Haymes. (Re-Issue).

The Lost Weekend (2705); Ray Milland, Jane Wyman (Re-Issue).

Bedtime Story (2706) (C): Comedy; Marlon Brando, Shirley Jones.

Bullet for a Madman (2707) (C): Action Drama; Audie Murphy, Darren McGavin.

Strike Me Deadly (2708): Melodrama; Jeannine Riley, Gary Clarke.

Island of the Blue Dolphins (2709) (C); Drama; Celia Kaye, Larry Domasind.

California (2710); Ray Milland, Barbara Stanwyck (Re-Issue).

Geronimo (2711); Preston Foster (Re-Issue).

Practically Yours (2712; Fred

All-Navy Cartoon Contest James R. Branum, CT1, USN.



"Peabody, the division officer and I feel that you have been in the firerooms too long!"

MacMurray, Claudette Colbert (Re-Issue).

On The Waterfront (2713): Marlon Brando, Rod Steiger (Re-Issue).

Law of the Lawless (2714) (C) (WS): Western; Dale Robertson, Yvonne DeCarlo.

The Evil of Frankenstein (2715) (C): Drama; Peter Cushing, Peter Woodthorpe.

The Liars (2716): Melodrama; Dawn Addams, Jean Servais.

Hey, There, It's Yogi Bear (2717) (C): Feature Cartoon.

Saturday's Hero (2718): John Derek, Donna Reed (Re-Issue).

Pushover (2719); Fred MacMurray, Dorothy Malone (Re-Issue).

It Should Happen to You (2720); Judy Holiday, Michael O'Shea (Re-Issue).

The Remarkable Andrew (2721); Brian Donlevy, Ellen Drew (Re-Issue).

Goliath and the Vampires (2722)

• **SO CHANGED TO ST**—The title of the sonarman rating has been changed to sonar technician, and the rating abbreviation changed from SO to ST, effective 15 Jul 1964.

The service ratings remain the same. Sonar technician, surface, is now abbreviated STG and sonar technician, submarines, is STS.

The change was made to reflect the present-day technological aspect of the rating, in view of the fact that men in the sonar rating have a skill and depth of knowledge much greater than implied by the title sonarman, which denotes sonar operator.

(C) (WS): Melodrama; Gordon Scott.

Lady in a Cage (2723); Drama; Olivia de Havilland, Ann Sothern.

Never Put it in Writing (2724): Comedy; Pat Boone, Milo O'Shea.

Golden Earrings (2725): Drama; Ray Milland, Marlene Dietrich (Re-Issue).

It's All In the Family

uss *John Willis* (DE 1027) has something to crow about—a family reenlistment. But it wasn't two brothers who shipped over; it was man and wife.

Chief and Mrs. Robert Roberts reenlisted for four and six years respectively. The chief, a commissary man aboard *Willis*, is a 16-year Navyman.

Mrs. Roberts is a YN3 attached to the Newport Officer Candidate School staff. She reenlisted under the STAR program and is guaranteed Yeoman Class "B" School. Upon graduation she'll receive automatic advancement to second class if otherwise eligible.

The Roberts met while stationed at NAS Memphis, Tenn. At the time, she worked in the commissary office and he in the bake shop.

Another Roberts is in the Navy. The chief's brother, Richard, a parachute rigger third class, is stationed at NAS Brunswick, Maine.

Flight Pay for 20-Year Men

If you are a naval aviation observer or flight surgeon, you will be delighted to know this: You can draw flight pay without meeting the minimum monthly requirements if you've been aeronautically designated for 20 years or more.

This means even though you don't log any flight hours, you can still draw the flight pay. But you must be serving under orders that involve flying, and you must be ready and qualified to fly.

However, this right does not become effective until the month following your 20th year of designation. Thus if you want to collect the flight pay for the month you become a 20-year designator, make sure you've logged the minimum flight hours.

If you'd like to read more on the subject, check NavCompt Inst. 72-20.35 and *NavCompt Manual*, Volume four, Chapter four.

★ ★ ★ ★ TODAY'S NAVY ★ ★ ★ ★

More New Ships on the Way

Thirty-six ships are in the news this month across the country. Some haven't progressed beyond the paperwork stage, while others have already joined the Fleet. Here's a roundup on shipbuilding activity for this month.

Contracts

The Bureau of Ships has awarded construction contracts for 26 escort ships to four shipyards. Ten of the contracts represent the Fiscal Year 1964 Shipbuilding and Conversion Program; the remaining 16 are authorized in the FY 1965 program.

- Twelve ships will be built in Seattle: DE 1052, DE 1053, DE 1054, DE 1057, DE 1062, DE 1063, DE 1064, DE 1065, DE 1066, DE 1069, DE 1070 and DE 1073.

- A San Pedro, Calif. shipyard received a contract to build seven: DE 1055, DE 1058, DE 1060, DE 1067, DE 1071, DE 1074 and DE 1076.

- The final seven will be built in Westwego, La: DE 1056, DE 1059, DE 1061, DE 1068, DE 1072, DE 1075, and DE 1077.

Representing a new class of escort ships, the DEs will have an overall length of 438 feet, a beam of approximately 47 feet and a full-load displacement of about 4000 tons. They will carry bow-mounted, long-range sonar, variable depth sonar,



FOR HELICOPTERS ONLY—A *Sea King* of HS-4 makes first ground controlled approach landing at NAAS Ream Field, Imperial Beach, California.

Drone Antisubmarine Helicopter (*Dash*), *Asroc* and antisubmarine torpedo launchers. In addition they will have a 5-inch/54 caliber gun mount; they'll also have space and weight reservations for a self-defense missile system.

Conversions

- A former merchant ship, the *Ethiopia Victory*, will be converted to a *Polaris* resupply cargo ship (AK-FBM). Capable of providing one-stop resupply to deployed *Polaris* submarine tenders, the AK-FBM will carry missiles, submarine weapons, frozen and dry provisions, general

cargo, spare parts and petroleum products required to maintain a submarine tender on station. The ship will be operated by the Military Sea Transportation Service (MSTS).

- A World War II Navy landing ship will receive a face lifting job which will equip the ship for duty as a mine countermeasures ship. The contract calls for a two-year modernization and conversion program which will return the veteran *Catskill* to the active Fleet as MCS 1. Major changes will include modern armament and fire control systems, replacement of the old vehicle deck with work and storage spaces and the addition of a helicopter landing platform.

Named

- The Secretary of the Navy has assigned the name *Francis Scott Key* to the nuclear-powered fleet ballistic missile submarine SSBN 657. This is the 40th of 41 *Polaris* submarines to be named.

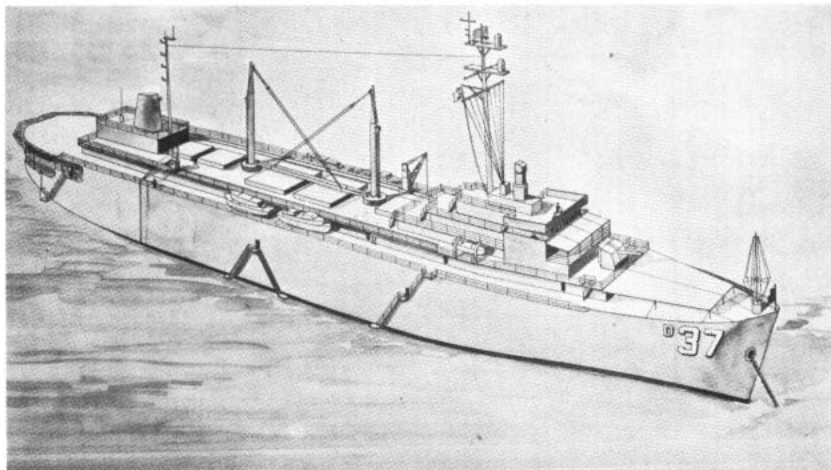
Keel Laid

- The keel for the nuclear-powered fleet ballistic missile submarine *George Washington Carver* (SSBN 641) has been laid at Newport News, Va.

Launched

- *Simon Bolivar* (SSBN 641) was launched 22 August at Newport News. Her keel was laid 17 Apr 1963.

- The amphibious assault ship



NEW CLASS—An artist's conception shows how the destroyer tender *Samuel Gompers* (AD 37) will look upon completion in Bremerton in spring of 1967.

Guam (LPH 9) was launched at the Philadelphia Naval Shipyard. *Guam's* keel was laid 15 Nov 1962.

- The oceanographic research ship *Thomas G. Thompson* (AGOR 9) was launched at Marinette, Wis. 18 July. Designed to be a floating laboratory, *Thompson* will be used in support of the National Oceanographic Research Program. The ship will displace 1370 tons and is 209 feet long. She will be civilian-manned and operated by MSTs. Her keel was laid 12 Sep 1963.

Commissioned

- *uss James Madison* (SSBN 627) was commissioned at Newport News 28 July. *Madison* is the 23rd SSBN to be commissioned. Her keel was laid 5 Mar 1962, and she was launched 15 Mar 1963.

- The 24th *Polaris* missile submarine, *uss Casimir Pulaski* (SSBN 633) was commissioned at Groton on 14 August. Her keel was laid 12 Jan 1963, and she was launched 1 Feb 1964.

- *uss Stonewall Jackson* (SSBN 634) was commissioned at Mare Island Naval Shipyard, Calif. on 26 August. Her keel was laid 4 Jul 1962.

Dewey's Loving Cup

A silver loving cup which once belonged to Admiral Dewey is now on board *uss Dewey* (DLG 14). It was bequeathed to the ship by the late George Goodwin Dewey, the admiral's son, who died in 1963.

The cup was given to Admiral Dewey by the city of Savannah, Ga., in March 1900. The admiral had returned to the U. S. in September



ADMIRAL'S CUP—Silver loving cup given to the Navy by ADM Dewey's son is now aboard frigate *Dewey*.

1899 after defeating the Spanish in the battle of Manila Bay without the loss of a single American life.

Other Dewey mementos, including a diamond-studded sword presented to him by President McKinley and a jewel-encrusted medal from the city of New York, were also willed to the Navy.

The silver cup will be displayed in *Dewey's* wardroom, along with several other mementos of the admiral's career.

European Softball Champs

The *Presidents* from *uss Franklin D. Roosevelt* (CVA 42) are the new European softball champions. The team rolled undefeated through a 10-team double elimination tourna-

ment in Naples to win the title. Sparked by the pitching of Charlie Thomas, AMSC, and Paul Kinch, ABH3, the *Presidents* won five consecutive games and an invitation to the CINCUSNAVEUR All-Navy elimination tournament.

In the first day of play the *Presidents* drew a tough Cyprus team as opponent and were forced to go 12 innings before winning 1-0. The winning run was driven in on a long double by outfielder Don Nunn, SN. Kinch pitched the entire game, giving up only two hits and striking out 29 batters.

Thomas hurled a shutout against *USS Enterprise* (CVAN 65) on the following day as the *Presidents* won their second game 2-0. Next *FDR's* victory-bound team faced the Naples *All Stars*. Kinch and Thomas combined to throw a two-hitter and the *Presidents* took it 3-1. The run scored by Naples was the only one scored against *Roosevelt* pitching in 40 innings of tournament play.

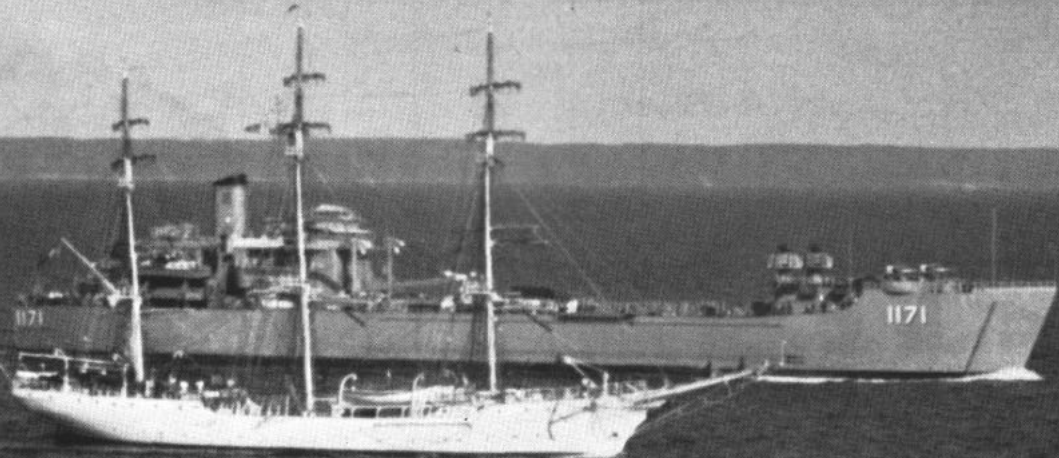
In the semi-final and final rounds the *Presidents* faced the SHAPE Air Force, Paris team. They took the semis 2-0 and exploded for five runs in the seventh inning of the final game to clinch a 6-0 victory.

By winning their last 13 games, the *Presidents* have upped their season record to 16 wins against three defeats.

'Valley' Knows Its Weather

When *uss Valley Forge* (LPH 8) makes a weather observation, she knows what she's talking about. Weather experts on this PacFlt am-

VISITOR—DeSoto County (LST 1171) cruises Lake Michigan with Norway's *Christian Radich* during tour of Great Lakes.





BIG CITY VISITOR—The attack aircraft carrier *USS Independence* (CVA 62) passes New York City's famous skyline.

phibious assault ship are so consistently correct that their ship has won the top CNO Weather Service Award for ship surface observations.

The award is given annually to the ship and shore station exhibiting the highest proficiency in surface and upper-air observations. The excellence award for upper-air observations for ships went to *USS Kretchmer* (DER 329). NAS Atsugi, Japan, took first place for shore station surface observations, while Fleet Weather Central, Kenitra, Morocco, was cited in the upper-air category.

Of 1254 observations made by *Valley Forge* during 1963, only two discrepancies were noted in review of the records. This represents an error percentile of 0.2. Qualification for the competition requires each ship within a category to make at least 400 weather observations during the calendar year and maintain an error percentile of not more than 0.5.

Valley Forge came from 77th place in the 1962 competition to win this year.

The top performance was turned in by NAS Atsugi, which recorded 8760 observations without one error.

The award for outstanding performance went to NAF Naples for the high level of performance by weather service personnel in con-

ducting flight briefings for U.S. and NATO military pilots and for the effectiveness of their services to Fleet units.

Special Merit Awards were presented to VW-1 and VW-4 for their outstanding performance, over a two-year period, in the missions of hurricane/typhoon reconnaissance.

He's Striking For 100

Ever talk to someone who could tell you about the "old Navy—the turn-of-the-century Navy? One man who's knowledgeable on this subject, CAPT Curtis H. Dickins, Chaplain Corps USN (Ret), learned about it firsthand. He was commissioned in the Corps in 1898, at the age of 33, and went on to a 31-year naval career. Today, at 99 plus, he's close to gaining membership in the Century Club.

Much of his Navy time was spent at sea. He served on *USS Constellation* (the frigate, not the carrier), *Chicago*, *Kearsarge* (BB5), *Tennessee* (BB43), *Prairie*, *Florida* (BB30), *New Mexico* (BB40) and *California* (BB44). In addition, he spent three tours at the Navy Yard, Portsmouth, a tour at the Navy Yard, Philadelphia, and was the Navy's third Chief of Chaplains.

When serving aboard *Florida*

(1912 to 1915) he was instrumental in replacing the old hand laundry system with modern machinery. *Florida* sailors were soon so much "whiter" than others in the Fleet that the machines were installed on other vessels.

Ashore, some chaplains in the U. S. around this period were having difficulty performing their work because they lacked suitable places to hold Divine Services. Chaplain Dickins faced this problem at the Philadelphia Navy Yard, where 25,000 recruits were in training. He appealed to the Secretary of the Navy for funds to erect a large recreational hall which could be used for many purposes, including Divine Services, but no money was available. So Dickins turned to private sources and raised enough money to purchase two large tents.

These served the purpose during the summer, but with winter approaching Dickins decided to improve the situation further. He raised an additional \$40,000 from private sources and erected two temporary buildings—one a hall with bowling alleys and a canteen, the other an assembly hall.

His other experiences included war duty in Vera Cruz, where he was wounded.

Since retiring from the Navy 35



I WON'T FORGET—Santa Claus got a list of gifts wanted for Christmas from USS *Mills* crew before they left the U. S. for Operation Deep Freeze '65.

years ago, Chaplain Dickins has continued to serve his church, and has taken a particular interest in current events. He resides in San Diego, Calif.

Flying Becomes Safer

CNO Aviation Safety Awards have been presented to 34 Navy and Marine Corps aviation units, and three aircraft carriers have won Flatley Awards, also for aviation safety.

The Flatley Award goes annually to the CVA, CVS and LPH which leads its field in accident prevention.

Chief of Naval Operations Aviation Safety Awards are given each fiscal year to the units which have made the most outstanding contributions to the Navy's aviation safety program. Competition is held in the six aviation type commands, and squadrons compete with similar squadrons within their command. An AirPac fighter squadron, for instance, competes with other AirPac fighter squadrons.

Winners for fiscal year 1964 are:

FLATLEY AWARD

USS *Franklin D. Roosevelt* (CVA 42)
USS *Intrepid* (CVS 11)
USS *Iwo Jima* (LPH 2)

CNO SAFETY AWARDS

Naval Air Force, Atlantic:

Fighter Squadron 33
Attack Squadron 66
Attack Squadron 65

Fighter Squadron 101
Carrier Air Wing 6
Carrier Antisubmarine Air Group 56
Patrol Squadron 45
Air Antisubmarine Squadron 24

Naval Air Force, Pacific:

Fighter Squadron 151
Heavy Attack Squadron 13
Patrol Squadron 31
Fleet Tactical Support Squadron 21
Helicopter Squadron 2
Light Photographic Squadron 63

Air Force, Fleet Marine Force, Atlantic:

Marine Fighter Squadron (All Weather)
541

Marine Observation Squadron 1

Air Force, Fleet Marine Force, Pacific:

Marine Attack Squadron 211
Marine Helicopter Transport Squadron 364
Marine H. Q. and Maintenance Squadron
15

Naval Training Command:

Training Squadron 24
Training Squadron 27
Training Squadron 7
Training Squadron 33
Naval Air Station Memphis, Tenn.

Naval Reserve Training Command:

Fighter Squadron 672
Attack Squadron 771
Patrol Squadron 812
Air Antisubmarine Squadron 663
Fleet Tactical Support Squadron 741
Helicopter Squadron 813

Marine Training Command

Marine Fighter Squadron 611
Marine Attack Squadron 322
Marine Helicopter Transport Squadron 234
Marine Medium Helicopter Squadron 772

South for the Winter

USS *Mills* (DER 383) has left the U. S. to take part in this year's Operation Deep Freeze. *Mills* is scheduled to patrol an area about halfway between New Zealand and McMurdo Sound, Antarctica. She will supply weather information and aid in navigation to aircraft flying between Christchurch, New Zealand, and Little America.

Mills was chosen for Deep Freeze partly because she is powered by diesel engines. Diesel-powered ships have greater underway endurance than black-oil types. The radar picket will operate from Dunedin, New Zealand, making 25-to 30-day patrols in her assigned area.

The ship's crew has had cold weather duty before, though never with Operation Deep Freeze. Last year they were stationed quite a bit further north, on the Greenland-Iceland-United Kingdom barrier.

Send the Buoy, Not the Man

A buoy to mark the location of a man overboard by reflecting radar signals, flashing a light and dyeing the surrounding water a passionate purple has been built by three USS *Ticonderoga* (CVA 14) Navymen.

Employing the fine art of cumshaw, Ben Swanson, ATC; Elton Forbes, AE1; and Claude Freeman, AMS2, welded two barrels together to form a cylinder. At the top they attached a steel post and two round, stainless steel plates to act as radar reflectors.

Dye markers which burst upon contact with water were placed in the buoy's base along with salt water batteries which furnished power for twin lights at the top of the buoy.

One dark night, *Ticonderoga* dropped the buoy over the side in a man overboard drill. The CVA and her two accompanying destroyers, USS *Prichett* (DD 561) and *Cowell* (DD 547) steamed about 10 miles away to lose contact with the buoy, then reversed their course. The buoy could be spotted while the ships were still five miles away.

If there had really been a man overboard that night, he could have used the life ring on the buoy's mid-section or clung to it until rescued.

If the man overboard isn't able to reach the buoy, its rate of drift is about the same as a man's which would keep the two within a reasonable distance of each other.

MCB 7 Takes Peltier Award

Mobile Construction Battalion Seven received the Peltier Award for its outstanding performance during 1963. It was its second time to win the four-year-old Award.

When the Cuban crisis broke in October 1962, MCB Seven deployed immediately to Guantanamo Bay. For nine months it was there working on projects it was originally going to undertake that December. It constructed base defenses and supplemented the defensive manpower.

Seven's most important job during the crisis was "Project Might," in which bunkers and other weapons emplacements were built along the defensive perimeter of the base. MCB Seven also manned these positions when necessary.

A bronze medallion mounted on a plaque, the Award is named for

former Chief of the Bureau of Yards and Docks, Admiral E. J. Peltier, CEC, (Ret). It was first presented in 1961 to MCB Nine, on the West Coast, for its work at Okinawa and Adak, Alaska, during 1960. MCB Seven received it the next year, and MCB One took it last year for its 1962 deployment to Antarctica.

Dig Down Deep, Fellas

A deep subject has been reinstated at the U. S. Naval Schools Construction (NAVSCON), Port Hueneme, Calif. The Seabees are learning the art of deep-well drilling.

The course was added to the school's curriculum because of the shortage of drinkable water in friendly Southeast Asian countries. During World War II Seabees drilled deep wells, but since then, this phase had been dropped from

NAVSCON's curriculum.

Stories about the critical need of drinkable water in these countries had come to the school through Seabee Technical Assistance Teams. It seemed a good idea to lay a little groundwork in case the Seabees should be asked to repeat their earlier miracles. If so, NAVSCON would be asked to provide the training for the younger generation.

The forethought paid off. NAVSCON received its first request early this year.

Proceeding on the principle that there is no substitute for actual practice, a selected group of Seabees went up to Rose Valley, a site high in the Los Padres National Forest to set up this phase of training. The terrain is similar in many ways to Southeast Asia.

From the beginning the instructors

How Do You Explain a Sand Box to the Auditors?

The people-to-people program and the fleet oiler *USS Hassayampa* (AO 145) aren't strangers. For the past two years, five orphanages in Nagasaki, Japan, have benefited from this acquaintance. In addition to donating several tons of clothing, men of the oiler have presented the orphanages with more than \$1500 and many bicycles for their older students.

In a recent visit to Sasebo, several *Hassayampa* men climbed aboard a bus and drove 50 miles south to Nagasaki. First they dis-

tributed clothing among the orphanages; next they began a first-rate repair and paint job on two of them.

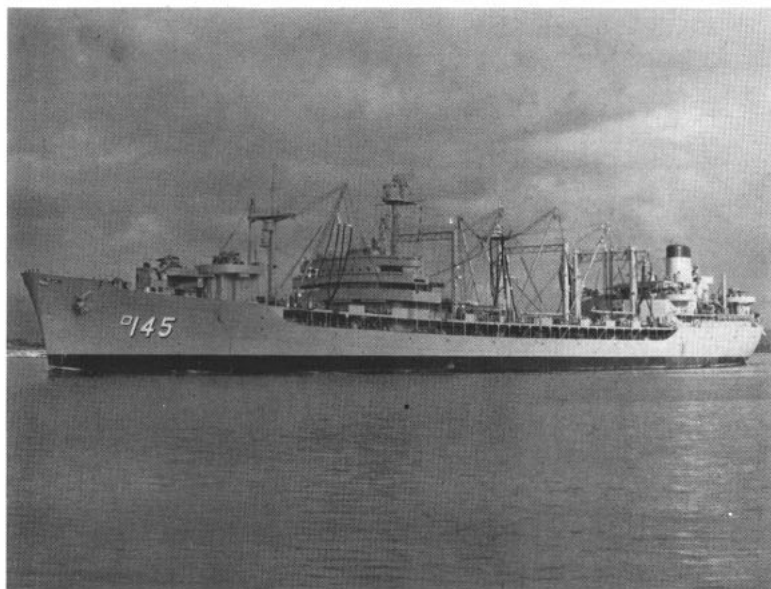
Later that day, the Navymen added their personal touch—a barbecue *Hassayampa* style. With 400 children working on the hamburgers, potato salad and ice cream, the cooks were kept busy. In no time at all they lost count of the food consumed.

Japanese families entertained the *Hassayampa* men that night. Hesitant at first because their

homes might not be what the visitors expected, the anxieties of the hosts vanished when the Navymen showed deep interest and enthusiasm for local customs.

The next day there was still work to do. After completing the routine repairs and painting, an additional flourish to the project was added—a number of sandboxes for the children.

Before the Navymen returned to their ship in Sasebo, several students presented *Kenko*, a ceremonial sword match as a thank-you.



PAINTERS—Men from the oiler *USS Hassayampa* (AO 145) put painting experience to use on Japanese orphanage.



SERVICE AT SEA—ASW support carrier *USS Randolph* (CVS 15) refuels *USS Cubera* (SS 347) with jury-rigged system during operations in the Atlantic.

emphasized the need for deep wells, since health hazards are common to relatively shallow wells. These usually are contaminated from the surface and frequently deliver a low quality of water from the standpoint of mineral content.

About 60 per cent of the time the Seabees found water. When they did, it was the signal to place a six-inch casing into the hole. This prevented the sides from slipping and

provided the space through which the pump pipe was placed.

The next step was to develop the well—a technique of surging the water up through a screen to determine if there were enough water of proper quality.

In the final step, the Seabees set the pump and arranged for the chlorination and storage of the water.

Their training completed, the first teams headed for Southeast Asia.

Friendship Often Sprouts in Far Places

A Navyman aboard the support aircraft carrier *USS Kearsarge* (CVS 33) prefers to apply his personal touch to the people-to-people program. His venture has ended—for the time being—with a trip to Gotemba, a community near Mount Fuji where Lawrence Gallagher, AT1, delivered 10,000 U. S. plant seeds to a local farmer.

The project began during *Kearsarge's* last cruise to the Far East when Gallagher, an ex-farmer himself, and Kiochiro Hayashi met near Gotemba and, as a result of comparing notes, became friends.

Struck by the similarity of their problems, Gallagher wrote to a friend in his home state of New Jersey, asking for a variety of plant seeds which, he thought, might do well in Gotemba. He received them before *Kearsarge* returned to Yokosuka for a second port call.

In turn, Gallagher passed the seeds on to 35 young farmers, members of an organization roughly equivalent to our 4-H Club, when he returned to Gotemba.

Planted last winter, the seeds unfortunately were destroyed when the area was hit by an unexpected cold wave.

When *Kearsarge* returned to Yokosuka after joining the Seventh Fleet this year, Gallagher again made the trip to Gotemba and presented Hayashi with a number of gifts that included a fresh supply of seeds. These were turned over to a local agricultural improvement representative for distribution to Japanese students.

Gallagher also brought a slide projector and slides showing farm and family life in the United States. He presented these in the Hayashi home and in a nearby temple.

Basic Theme With Variations

It isn't very often a submarine is refueled from an aircraft carrier—and from a jury-rig at that. While on her summer midshipmen's cruise, *USS Randolph* (CVS 15) refueled *USS Cubera* (SS 347) in just that manner. Here's how they did it:

The hose was hooked to *Randolph's* aviation fuel pumping stations instead of the refueling system. Using a wire equipped with two trolleys and blocks to suspend the 1½-inch hose, the refueling detail aboard the carrier passed it to *Cubera* as a standard highline.

An extra 100 feet of hose was highlined first to allow enough slack to reach the submarine's after fueling connection. Through this jury-rig, *Cubera* took on 6500 gallons of JP5 fuel in two hours and eight minutes.

Although it is slightly more expensive, JP5 may be used in a submarine instead of diesel. In fact, it's cheaper for a submarine operating at sea to take on JP5 than to steam many miles out of its way to refuel with diesel.

During the entire operation the ComNavAirLant band supplied the submariners with some lively tunes. The band was temporarily assigned to *Randolph* for the midshipmen's cruise.

Scanner's Chiefs Know How

For the third time in as many years, a *USS Scanner* (AGR 5) chief petty officer has received the Secretary of the Navy Commendation for Achievement Award.

The latest *Scanner* Navyman to receive the award was Senior Chief Boilerman John E. Bretthauer. Bretthauer's citation credited him with superior performance in the field of leadership, professional skill, and resourcefulness in carrying out his responsibilities.

In 1962, *Scanner's* Chief Boat-swain's Mate Charles M. Cogdell pinned on the ribbon. In 1963 another *Scanner* Navyman, Senior Chief Electrician's Mate Lawrence C. Woughter, won the SecNav Commendation.

About 340 Navy-men have received the SecNav Commendation for Achievement Award since its inauguration in 1962. To earn the award an enlisted man must make an important contribution to the Navy, greatly exceeding that which would normally be expected of him. This contribution may be in the field of leadership or related to the Navy-

man's professional skill—or both. Lieutenant commanders and below may also receive the commendation, but their contribution must be in their professional field.

Scanner is a West Coast radar picket ship.

Exotic Port, This Frisco

Four destroyers under the flag of the Rising Sun entered San Francisco recently for their first port of call in continental United States. The five-day tour was much like a visit of a group of our ships to a Japanese port, in reverse.

The squadron, on a training cruise with 160 newly commissioned ensigns and 1150 crew members, is made up of two new Japanese destroyers and two former U. S. ships. There was plenty to keep the visitors busy in San Francisco.

The squadron commander, Rear Admiral Kazutori Kuhara, visited with Fleet Admiral Chester W. Nimitz, USN, and the acting mayor of the city. To the latter he presented a group of drawings made by school children in Osaka and Yokosuka.

Meanwhile, the trainees toured U. S. Navy radar picket ships and the Naval Schools Command at Treasure Island. They were taken through the highly automated Naval Supply Center, Oakland, and the

FOUR JAPANESE destroyers including *Teruzuki* (DD 162) left and *Yugure* (DD 184) make a port visit to San Francisco on Pacific training cruise.



A CONSTANT REMINDER—The idea of placing on doors signs which aid in keeping Navymen aware of the importance of practicing effective leadership at all times and at all levels originated in Attack Squadron Forty-Five based at Cecil Field, Fla. Here, the eyes of Yeoman First Class K. W. Lerner, USN, are directed toward one such 'reminder' as he prepares to enter one of the doors at the Bureau of Naval Personnel. The signs can be made locally and may include a 'pull or push' for leadership, depending upon which way the door swings.

overhaul and repair section of NAS Alameda. They were later addressed by FADM Nimitz.

The visiting ships held open house, during which more than 4000 inquisitive San Franciscans took a look at life aboard typical Japanese ships.

Then, of course, there were the inevitable tours and sightseeing jaunts. Points of greatest interest were Chinatown, the Golden Gate bridge and Golden Gate park, with its Japanese tea gardens, museum, statues, lakes and grounds. The Japanese navymen conducted traditional graveside ceremonies at the local Japanese cemetery to pay respect to their deceased countrymen on this side of the Pacific.

No port visit is complete without some sporting events, so the visitors met U.S. sailors from Treasure Island in basketball, volleyball and softball contests. They also put on judo and kendo demonstrations for the visitors' benefit.

To wind up their visit, the entire squadron was entertained at a picnic sponsored by the Japanese Northern California Committee.

They seemed to enjoy the United States as much as U.S. sailors enjoy Japan. Everyone had a good time.

Handy Gadgets, These Helos

Helicopter Utility Squadron One at NAAS Ream Field, Imperial Beach, Calif., has a new aircraft, the UH-46A *Sea Knight*.

As part of the Navy's vertical replenishment program, the new medium utility helicopter transfers cargo from replenishment to combatant ships while they are underway at sea.

Using this method of transfer, ships to be replenished need not reduce their speed during operations. They'll stay in their task force formation and lessen the possibility of collision.

A 10,000-pound-capacity hook under the fuselage allows the external transport of cargo. Since the rear ramp can be left open during flight, the helicopter can haul objects that are longer than the cargo compartment, such as missiles. Even in the roughest seas, cargo can be loaded or unloaded.

Emergency water landings and take-offs are possible in the *Sea Knight*. It's also able to transfer personnel from ship to ship and conduct emergency search and rescue operations. The helicopter can fly 100 nautical miles, rescue 20 persons and then return to ship or shore.



FINE FEEDER—USS *Tracer* (AGR 15) took top Navy award for small ship mess.

Marines Take LantFlt Tilt

Fleet Marine Force Atlantic has captured the 1964 Atlantic Fleet tennis championship at Newport Naval Base.

Play for the trophy went down to the wire between the champs and the CruDesLant team. The two squads were tied at 13-13 going into the open doubles final. In the battle that followed, Marine First Lieutenants John Carlton and James Pearson stopped the CruDesLant duo of Lieutenant (jg) John Bennett and Ensign Frank Swanson 6-4, 11-9, 6-4, giving the Leathernecks 18 points and the title.

The loss dropped CruDesLant to third place in the final standings, one point behind Amphibious Force Atlantic's 14.

It appeared that CruDesLant would wrap up the championship early in the final day's action. Pitted against PhibLant's Lieutenant Dick Hoff in the open singles final, LT Bennett raced to a 5-3 first set lead. Then Hoff came back, taking four straight and the set. From then on it was all Hoff as the lanky PhibLant netter took 6-1 and 6-3 set wins and the singles trophy.

The day's senior doubles finale produced the real cliff-hanger. Moving to a 6-0 first set triumph, the

Marine duo of LTCOL James Tuma and Chief Warrant Officer Art Farrington held a big lead over CruDesLant's Commander Bruce Flory and Captain Grover Rawlings. The tide turned in the second set, with the Flory-Rawlings duo winning 6-3. The CruDesLant twosome raced to a 5-1 edge in the deciding set before their opponents came to life. Aided by a number of double faults by

the CruDesLant team, the Marines won three games in a row before bowing in the 10th game.

In other action, Commander Flory cruised to the senior singles title with a 7-5, 6-2, win over Farrington.

Final standings, Atlantic Fleet Tourney:

- | | |
|---------------------|------------------|
| 1. FMFlant—18 | 4. ComSubLant—11 |
| 2. ComPhibLant—14 | 5. NavAirLant—4 |
| 3. ComCruDesLant—13 | 6. ComServLant—2 |

Sproston Much-Decorated Ship

uss *Sproston* (DD 577) is now a respectable 21 years old and far from decrepit. In fact not too long ago, she found herself one of the most decorated ships in the Pacific Fleet Cruiser-Destroyer Force.

Boasting a total of eight competitive awards, *Sproston* earned the Weapons "W" (one of five awarded in the Cruiser-Destroyer Force Pacific), the Operations "E," the Anti-submarine Warfare "A" and Gunnery "E's" on three of her four gun mounts. She was judged best in gunnery for Destroyer Squadron 25 and was second in competition for the Battle Efficiency "E."

In addition to her fighting prowess, *Sproston* showed she could play hard too. In athletic competition with other units of Destroyer Flotilla Five, she acquired three firsts (two basketball and one volleyball) and numerous seconds. She won the Commodore's Cup Trophy as the 1963 Flotilla athletic champion.

For Sam Malta, TM2, 1963 was also a good year. He was chosen as *Sproston's* Man of the Year.

ON THE SPOT—Helo from USS *Constellation* (CVA 64) makes routine stop on fantail of the guided missile frigate USS *Gridley* (DLG 21).



LETTERS TO THE EDITOR

There Are Many Kinds of Sea Duty

SIR: What's the difference, if any, between the terms "preferred sea duty" and "arduous sea duty?" If a man is on the current Shorey and his present duty station becomes preferred sea duty before his transfer, would he be extended at his present duty station? If so, would a request for transfer to arduous sea duty be justifiable?—J. S. SO1, USN.

• In the "Enlisted Transfer Manual," three types of sea duty are defined: toured, overseas service and arduous.

Toured sea duty is performed in non-rotated ships or units (these usually are under the administrative control of a fleet or type commander) homeported in a foreign country. The tour may not necessarily be the same as that for the overseas home port or geographical area, but it won't be longer than the tour lengths established by the Secretary of Defense.

You're assigned in an overseas service category when you're at a shore activity outside the continental U. S. (except Alaska and Hawaii).

Arduous sea duty is performed aboard ships or units which spend considerable time at sea away from their home port during local operations; when they're deployed, they usually operate at sea extensively.

Preferred sea duty is performed aboard ships and units homeported in the U. S. which do not deploy for extended periods; they either remain in their home port or operate from there for short periods. The term "preferred sea duty" is used only by Fleet EPDOs.

Upon change of status from shore to sea duty, everyone will be given a Sea Duty Commencement Date (SDCD) as of when their status is changed.

If you want arduous sea duty, submit a request through normal channels. It will be forwarded to your EPDO.—Ed.

Place of Reenlistment

SIR: I would like a clarification of "Place of Reenlistment" as specified in BuPers Manual, Art. C-1403(4), which states: "Reenlistment may be effected on board ship while serving at sea provided the necessary facilities for effecting payments incident to separation and for conducting separation physical and dental examinations are available on board."

Does "on board" specifically mean that the disbursing and medical facilities must be attached to the ship?

This section is open to unofficial communications from within the naval service on matters of general interest. However, it is not intended to conflict in any way with Navy Regulations regarding the forwarding of official mail through channels, nor is it to substitute for the policy of obtaining information from local commands in all possible instances. Do not send postage or return envelopes. Sign full name and address. Address letter to Editor, ALL HANDS, Room 1809, Bureau of Naval Personnel, Navy Dept., Washington, D.C. 20370.

If so, this would seem to pose an inconvenience, in some cases, to the many ships which do not have these facilities, and a disappointment to some crew members who might wish to reenlist at sea.

If a ship without the necessary medical and disbursing facilities is due to deploy with a couple of crew members who are due for reenlistment within days, couldn't these men receive physical exams before departing, and be paid at the next facility the ship encounters?

Or is it the object of this article to restrict certain ships from reenlisting men at sea?—G. A. V., YN3, USN.

• The provisions of Article C-1403(4) outline the normal procedure for effecting reenlistment at sea, but there

Ships Can't Run Without Fuel

SIR: In your July issue there was an article about Operation Red Cloud and Springboard 64. You listed, by name, all the carriers and guided missile ships—but you didn't mention the auxiliary ships.

During the Springboard operation my ship, USS Canisteo (AO 99) refueled 143 vessels including all those you listed. I and the rest of the crew feel we have established a record for refueling operations during a Springboard operation. We also feel you should try to give more recognition to the fleet oiler in the future, for the AO is an important part of our country's defense. Without our long hours of work, exercises like Springboard could not be conducted.—G. R., SFP3, USN.

• We agree: The importance of the fleet oiler should not be underestimated. Credit should be given when credit is due, and from the story it certainly seems that your ship deserved to be listed.

You say you refueled 143 ships? You must have been very busy. Too busy, we suspect, to drop us a line and tell us the details about it.—Ed.

is no objection to reenlistment on board ships not having the specified facilities if, as you say, the physical examination is given just before deployment and payments are made immediately upon return to port. Reenlistment in such cases is considered to be "on board."

Early reenlistment under the provisions of "BuPers Manual," Art. C-10317, should be considered as an alternative for those individuals whose enlistments will expire while deployed on ships not having necessary facilities for physical examinations and disbursing.—Ed.

Mt. Hood Mystery

SIR: I understand the ammunition ship USS Mt. Hood (AE 11) exploded somewhere in the Pacific during World War II. Can you tell me where it happened, when, and how?—H. F., Sheridan, Wyo.

• Mt. Hood exploded while riding at anchor in Seeadler Harbor, Manus Island (in the Admiralties) on 10 Nov 1944.

So much for your first two questions. As for the third, your guess is as good as anyone's. The survivors don't know what happened, and neither do we.

One account of the disaster may be found on page 49 of "Battle Report (Volume Five), Victory in the Pacific" by Captain Walter Karig, USNR.

On the morning of 10 Nov 1944 a boatload of 11 men were preparing to leave Mt Hood, bound for assorted missions ashore. A lieutenant joined them before they cast off. They, and six other men already absent from the ship were to be the only survivors.

At 0800 the 12 men who had come ashore in the boat were walking up the beach. Mt Hood erupted in a ball of flame and they were knocked flat by the concussion. Smoke shot 7000 feet into the sky and smothered the area for a quarter-mile radius. The explosion blasted a trough in the ocean floor a city block long, 50 feet wide and 40 feet deep.

Of the ships in the harbor, 34 were damaged. USS Argonne (AP 4), very near the ammo ship, was badly damaged. USS Oberrender (DE 344), 1500 yards away, was hit by a piece of shrapnel which punched a hole in her side and killed several sailors. The destroyer tender USS Piedmont (AD 17), nearly a mile away, was hit by two 500-pound bombs which penetrated four decks but, miraculously, did not explode.

A total of 372 men were killed or



NEW CHOPPERS—UH-46A Sea Knights of Helicopter Utility Squadron One give added strength to the Navy's important vertical replenishment program.

missing and 371 were wounded. The largest remaining piece of the ammunition ship was a fragment of metal some 16 feet long and 10 feet wide.

Two hours later Tokyo Rose announced that the ship had been destroyed by a midget submarine. Several eyewitnesses, on the other hand, claimed they saw an unmarked aircraft drop a bomb on the ship seconds before the blast. And one destroyer fired on a plane which seemed to fly from the cloud of smoke.

Unfortunately, any conclusive evidence went up in the explosion, and we'll probably never know for sure.—Ed.

The Plane Is Quicker Than the Eye

SIR: Of the 50,000 accident-free launchings claimed by USS Bon Homme Richard (CVA 31) in the April 1964 issue, how many were made by planes with their engine air intakes completely covered and without a pilot? That's the way it looks from the photo you published. Kinda casts a cloud over all such claims, I'm thinking.—G. E. H.

• Don't do that to us. No matter how many boners we make, we're still inclined to take each one seriously.

However, after a good hard second look at the original photograph, we feel much better. You are, we suspect, the victim of a rather remarkable shot in which the camera speed was just slow enough to blur slightly the front end of the plane and not (noticeably) the tail portion. The pilot is there—honest—as his helmet and O₂ mask are visible in the original. Again, blur makes the

air intake appear to be covered, but that is, we think, because the inside is painted white. As you know, air intake covers are painted red, not white. Okay? —Ed.

SIR: You're right; I'm wrong!

After my letter to you was posted, some busybody made an enlargement about half the size of a desk top of the photo. Sure enough, there was a head in the cockpit.

We still couldn't decide if the intake

THIS CRUSADER became 50,000th accident-free launch from USS Bon Homme Richard (CVA 31). Contrary to first belief of at least one reader, who has since sided with us, plane does have a pilot, and engine's air intake is uncovered.



was open, but we figured the photo was for real.

I felt rather foolish, but then try as I might, I do make mistakes, sometimes more than one a day. I hoped my letter would be lost or ignored, but neither happened.

My apologies and thanks for having taken part of your busy day to answer a letter from a crank. It indicates your interest in exactness and in setting readers straight. I stand straightened.—G. E. H.

•De nada.—Ed.

Tallahatchie County Sea Story

SIR: I am an avid reader of ALL HANDS; however, I am slightly disappointed. You have printed several articles concerning ships which are "one of a kind," but I have as yet to see an article about USS Tallahatchie County (AVB 2).

Having started life as LST 1154, Tallahatchie County underwent a multi-million dollar conversion which included installation of a new aluminum superstructure with a deck area considerably larger than the original one. The job was done at Naval Shipyard, Charleston, S. C., between December 1960 and February 1962, when she was recommissioned. After various shakedown activities and underway training at Little Creek, Tall County was deployed to the Med for duty with the Sixth Fleet.

AVB stands for advanced aviation base ship. To put it in plain words, she provides a completely self-contained portable airfield for the support and maintenance of SP2H's (P2V's). In her tank deck she carries 6x6 and 4x4 trucks, an aircraft crash truck,

avgas and avlube trucks, a bulldozer, jeeps, pickups, a carryall, aircraft starting units, auxiliary aircraft power supplies, a water buffalo, 15 trailer vans including a communication van with HF, SSB, VHF and UHF transceivers, an aerology van with weather forecasting capability, supply vans, repair vans, a library van for technical manuals, and an office van. All vans can be airlifted to operating areas if need be.

An AVB can set up and operate an airfield in an advanced zone, so the patrol planes will not have to fly long distances to a patrol area. *Tallahatchie County* can beach herself, off-load the equipment, and have a base set up ready to receive the first aircraft within three hours. The ship carries spare parts and repairmen to make all minor and some major repairs on aircraft, and rockets, torpedoes, bombs and sonobuoys.

An unusual feature is that the ship has blackshoes, airdales and Seabees aboard as ship's company. She carries a crew of approximately 200 enlisted and 20 officers. Her type commander is COMNAVAIRLANT and her CO, XO and Ops officer are all aviators.

Talle County usually operates independently. However, when she is on advanced base operations, she provides support for Fleet units operating in her area by handling high priority cargo, mail and personnel. Transient personnel are messed and berthed aboard ship until arrangements can be made to send them on their journey, either home or back to sea. The ship has troop berthing for over 200 men besides ship's company.

In the Med, *Tallahatchie County* has visited or operated from the following ports: Rota, Naples, Suda Bay, Athens, Genoa, Villefranche, Catania, Nice, Beirut, Barcelona, Cannes, Rhodes, Cagliari and Piraeus. She has visited several of the ports more than once.

Now, how's that for a sea story?—James H. Kerr, RM2, USN.

• *We think its fine, and are much obliged for your contribution. We feel that every ship and unit has a story to tell and usually can tell it better than anyone else when motivated.*—ED.

Tailor-Made NavCads

SIR: There is an old saying, attributed to Confucius, to the effect that one picture is worth a thousand words. On page two of the May issue of *ALL HANDS* is a picture that I would venture to guess is worth a thousand prospective NavCads. It portrays a fledgling naval aviator being measured for a new suit of khakis.

The caption says "NavCad is fitted to uniform . . ." and sure enough, there is the tailor making a chalk mark on the poor lad's hand to show how much of the arm has to go before the sleeve



LOOKING SMART—Waves at Washington's Naval Security Station stand at attention as they are inspected by highest ranking Wave, CAPT V. B. Sanders.

length is right.

It makes me thankful that I received my uniform in the good old days when they marked the sleeves and then proceeded to cut them to fit the arm.—P. B. Kincade, LT, USN.

• *As we implied, NavCad training is no cinch, and this method of fitting uniforms shows just how tough a NavCad has to be to get through Pensacola.*

We used this picture because it was made early in the fitting, when the cadet was still in one piece. However, you will notice that some of the fingertips on his right hand do not show, which indicates he has already been fitted for his gloves.

There has been some loose talk of

HAVING A FIT—A tailor makes mark on NavCad's hand . . . to cut sleeve to fit arm or vice versa?



doing away with this tailoring system and perhaps your letter will help focus attention on its shortcomings.

Until now, the loudest complaints have come from cadets who had trouble keeping up with other runners on the obstacle course after having their legs cuffed to fit their trousers.

Sorry that we can't go into further details at the moment, but your letter caught us short-handed as well as red-faced. But thanks, anyway.—ED.

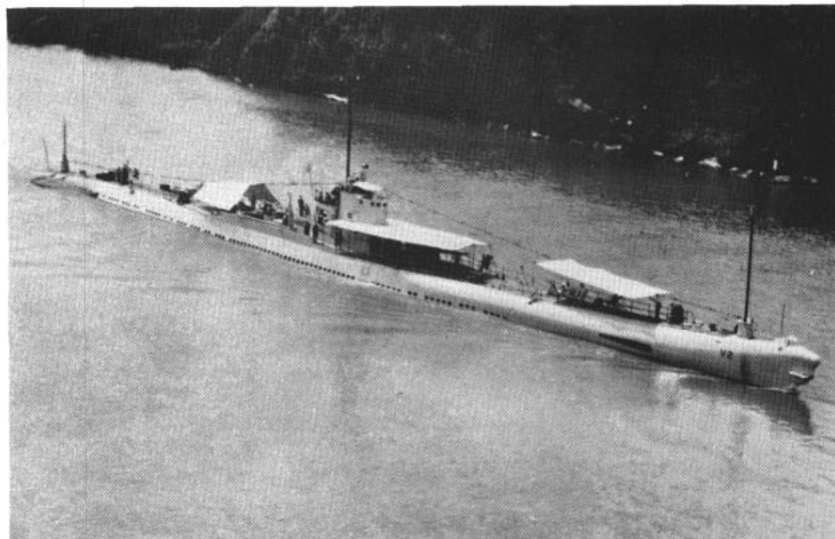
Waves Are Part of the Navy Family

SIR: If it's possible for the *Marines'* magazine to publish a two-page spread about women Marines in each issue, why can't *ALL HANDS* do this for the Waves? There are many more Waves than women Marines. I would think that with approximately 6000 enlisted women and 700 Wave officers on active duty in the Navy, a section devoted entirely to Waves is certainly called for.

The exclusive section about women Marines probably helps them feel they belong to the Corps.—D. M. P., YN2 (W), USN.

• *We do not publish a special column, or department, exclusively devoted to Wave activities for the same reason we do not publish special departments concerning the activities of Seabees, submariners or Carrier Air Groups—to cite only a few examples. We consider Waves to be an integral part of the Navy, just as are Seabees or submariners. To devote a regular special section of the magazine to the activities of any special group would, in our opinion, tend only to exclude them from the whole.*

We hope you have noticed, however, that much of the editorial content does apply directly to Waves in respect to matters of career interest. We also hope



OLD-TIMER—USS Bass, of post-WWI vintage, was given four designators in the course of her 20-year Navy career. They were V-2, SF-5, B-2 and SS-164.

you have noticed that Waves are frequently mentioned in connection with most naval activities—sports, recreation, career opportunities, advancement and promotion, again to cite only a few examples.

We have tipped our hat to all the Waves—editorially speaking—when in the July 1964 issue we devoted the inside back cover exclusively to photographs of the Waves to celebrate their 22nd birthday.

We are as happy to publish articles concerning individual activities of Waves as we are to publish individual activities of any other group. Drop us a line and tell us what your activity is doing, Wave-wise, that will be of interest to a large segment of the Navy.
—Ed.

Subs Had Punch in Old Days, Too

SIR: To amplify the letter on submarine guns (page 25 of the May issue), here is some information on large submarines of the pre-nuclear period with which some of your readers may not be familiar.

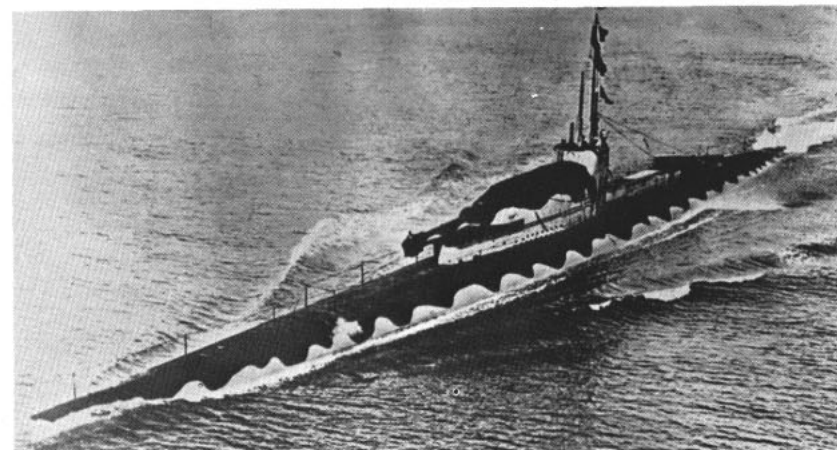
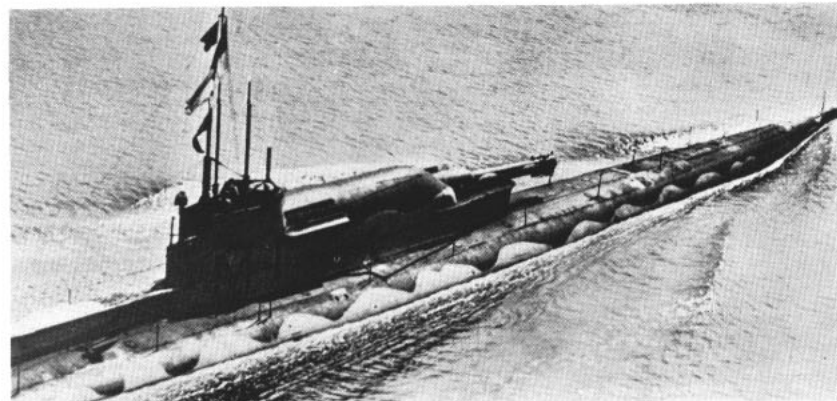
During World War I, the British designed three submarines in what they called the "M" Class. The guns were for shore bombardment and may have been intended for use against the German coastline.

The "M" Class subs carried a 12-inch gun forward of the conning tower which, according to the 1925 edition of *Jane's Fighting Ships*, was loaded while the submarine was surfaced.

The boat then dived to between 12 and 20 feet, leaving the muzzle of the gun a few inches above the surface. The gun was fired while running submerged, using the periscopes for sighting.

A three-inch gun and a light machine gun were carried for self defense.—R. H. Webber, LTJG, USNR.

• Thanks for recalling to us this really remarkable hardware. We know your story is true because you say so and because of the photograph of the M-1 you sent along and which is reproduced herewith.—Ed.



Barracuda, Bass and Bonita

SIR: I recently met an old timer who was discharged from the Navy in 1934. We looked through some of his scrap books and ran across photos of three submarines marked V-1, V-2 and V-3.

He says the subs were renamed before or during World War II. Do you know anything about them? Also, were any of the three ever designed or converted into double-deck boats?—G. H. C., RM1, USN.

• The three ships in question are fleet submarines constructed in the decade following World War I. They were commissioned as V1 (SF 4), V2 (SF 5) and V3 (SF 6).

V1 and V3 each carried a 5-inch/51 caliber gun. V2 had a 3-inch/50. The rest of their armament was the same—six 21-inch torpedo tubes and two machine guns. They were single-deck boats designed for a complement of 56 (6 officers and 50 enlisted).

In 1931 the U. S. Navy reclassified its submarines. The fleet types, which were capable of long-range operations, were given the names of fish, and the shorter range S-boats, continued to be designated by number only.

V-1, V-2 and V-3, being fleet types, were given the names USS Barracuda,

BIG SHOTS—British 'M' class submarines designed during World War I had a 12-inch gun forward of conning tower to be used for shore bombardment.

Bass and Bonita (in one, two, three order.) For several months they were known as B-1, B-2 and B-3 until their designations were changed to SS-163, SS-164 and SS-165. Nevertheless, submariners continued to call them V-boats.

By 1937 all three subs had served in both the Atlantic and Pacific Fleets. In the middle of that year they reported to the Philadelphia Navy Yard where they were placed out of commission in reserve.

During the emergency period immediately preceding the bombing of Pearl Harbor, they were reactivated and added to the Atlantic Fleet. On 7 Dec 1941 all three were operating in the vicinity of the Canal Zone.

During the war, Barracuda made six Pacific patrols and Bonita made several in both the Caribbean and the Pacific—but neither caught sight of the enemy. Bass didn't meet the enemy either, but was not as lucky as her sisters. On her fourth Atlantic patrol fire broke out in her after battery room and quickly spread into the torpedo compartment. The boat was not lost, but almost half of her crew were killed by asphyxiation.

In late 1942 all three returned to the Philadelphia Navy Yard for conversion to cargo carriers—but not double-decked boats. After coming out of the yard they conducted training cruises off the eastern U. S. coast until March 1945. They then returned to Philadelphia where they were decommissioned and, shortly thereafter, stricken from the Navy list.—Ed.

Who Was Really First?

SIR: A rather simple question arose in our wardroom today and I was embarrassed to discover that I, as a Supply Officer, couldn't answer it. Perhaps you can help.

Who was the first admiral, per se, of the U. S. Navy Supply Corps? What was his date of rank—R. P. B., ENS, SC, USNR.

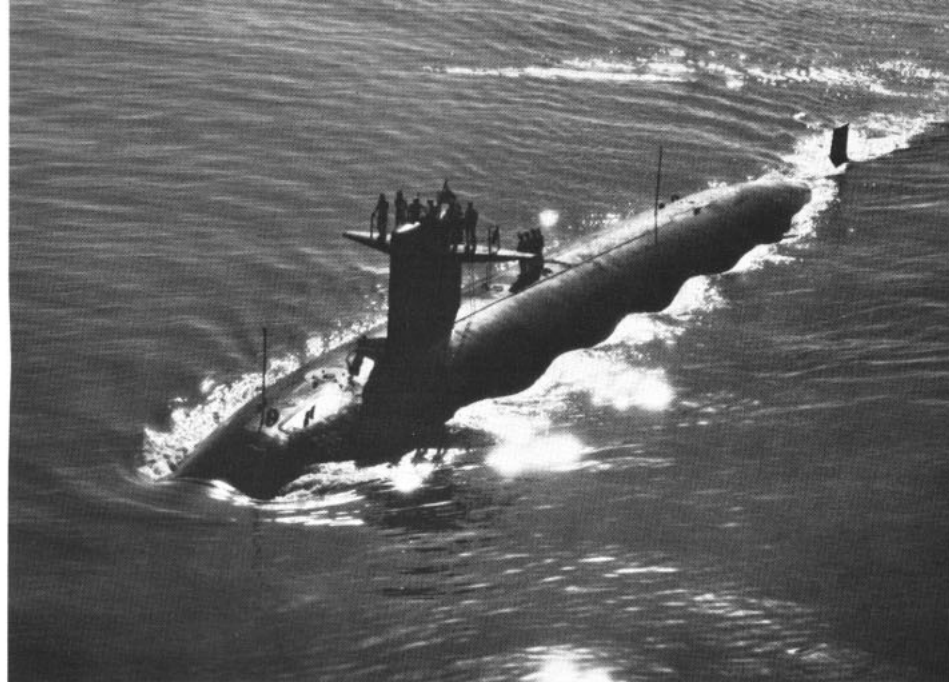
• Granted, it's a simple little question but the answer . . . That's something else again. We'll give you the facts, as uncovered by a very aggressive and determined lieutenant in the Supply Corps to whom we turned for help, and you can decide for yourself.

The first admiral to be Chief of the Bureau of Provisions and Clothing was Rear Admiral William Shubrick, who served in that position from 1844 to 1846. However, he was a line officer, so he's not the man you're looking for.

Perhaps a brief background discussion of the question of rank might be useful at this point.

Originally, staff officers of the Navy did not have rank as did line officers. They were addressed by profession rather than by rank—purser, for example.

In 1841, staff officers were given assimilated rank, and all pursers were ac-



UP AND OUT—The nuclear powered submarine USS Plunger (SSN 595) heads to sea off coast of Oahu, Hawaii, with some of crew topside.

corded the privileges and benefits of lieutenants. In 1847, pursers were granted relative rank, with all pursers of more than 12 years in grade to rank with commanders, and those of less than 12 years with lieutenants.

This rank was, however, relative. Pursers were ranked with commanders or lieutenants without actually holding the rank of commander or lieutenant.

In 1860, the title "purser" was changed to "paymaster." In 1861, the grade of assistant paymaster was created. Two years later, Secretary of the Navy Gideon Welles (who, incidentally, had been Chief of the Bureau of Provisions and Clothing, 1846-49) established relative rank as follows: Paymasters after 15 years, with captains; paymasters after five years, with commanders; paymasters, first five years, with lieutenant commanders; assistant paymasters with masters.

In the same General Order in which he established this relative rank, Secretary Welles also stated that the chiefs of the various bureaus of the staff corps were to rank with commodores.

To return to our original theme: Paymaster Horatio Bridge, who had been commissioned a purser in 1838, was serving as Chief of the Bureau of Provisions and Clothing at the time (1854-69). Commodore Bridge could, we presume, be considered the first Supply Corps "admiral" if you want to push a point or so. However, your wardroom opposition will undoubtedly remind you that this title of commodore was a relative rank, not true rank, and it remained only as long as Paymaster Bridge retained the position of bureau chief. And they will be right.

The Personnel Act of 3 Mar 1899 included a proviso "that all sections of the revised statutes which, in defining rank or positions in the Navy, contain

the words 'the relative rank of' are hereby amended to read 'the rank of,' but officers whose rank is so defined shall not be entitled by virtue of their rank to command in the line or in other staff corps."

At that time, Edwin Stewart was serving as Paymaster General and Chief, Bureau of Supplies and Accounts. (The Bureau of Provisions and Clothing had become the Bureau of Supplies and Accounts in 1892.)

Stewart had been Paymaster General since 1890, holding the relative rank of commodore. He became rear admiral on 3 Mar 1899. If you want to claim him as the first Supply Corps admiral, feel free.

But life is never quite that simple. In 1906, a further complication arose. By this time, there were several rear admirals in the Pay Corps on the retired list, and several others on active duty.

In 1906, two retired Pay Corps commodores, former chiefs of the Bureau of Provisions and Clothing—James Horatio Watmough, Paymaster General for several months in 1877, and Thomas Henry Looker, Paymaster General for several months in 1890—were promoted to the rank of rear admiral, to rank from 3 Mar 1871 (the date that they had originally been promoted to pay director).

These two men, therefore, had the earliest dates of rank of any Pay Corps rear admirals, being given exactly 28 years' precedence over Rear Admiral Stewart. So either of these two could be called the first Supply Corps admiral, if you felt so inclined.

Glad to clear up this little matter for you.—Ed.

• There was one further small point. One section of the 1899 Personnel Act

Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, **ALL HANDS** Magazine, Room 1809, Bureau of Naval Personnel, Navy Department, Washington, D. C. 20370, four months in advance.

• **uss West Virginia (BB 48)**—The 10th annual reunion will be held at the VFW Hall, Gardena, Calif., on 5 December. For information, write to R. A. Brown, c/o VFW Hall, 1822 West 162nd St., Gardena, Calif.

• **uss Salamaua (CVE 96)**—A reunion is planned for ship's company and squadrons which served on board. Write to CDR Charles T. Macdonald, USNR, 1125 Marlan Drive, Alexandria,

Va., 22307.

• **uss Coral Sea/Anzio (CVE 57)**—A reunion is being planned in Oklahoma City in June 1965. For details, write to Courtney Spratlin, Winterville, Ga.

• **uss LCI(C) 466** and **uss LST 684**—A reunion is being planned, with time and place to be decided by mutual consent. Write to William M. Moldoff, P. O. Box 151, Nassau, N. Y. 12123.

• **NAS Akron, Ohio**—A reunion is being planned for all who served on board, or who were attached to the squadrons, from December 1947 to October 1957. For details, write to C. A. Cort, YNC, USNR, 924 Greenwood Ave., Akron, Ohio, 44320.

stated that nothing in the legislation was to "be construed as changing the titles of officers in the staff corps."

A paymaster with the rank of captain continued to be addressed as "paymaster." The title of rank was considered applicable only to line officers.

In 1918, Secretary of the Navy Josephus Daniels changed "Navy Regulations" directing that thereafter "... every officer in the Navy be designated and addressed by the title of his rank without any discrimination whatever."

At that time, the Paymaster General was Sam McGowan. Rear Admiral McGowan could therefore be considered the first "Supply Corps" admiral. However, this position is not really tenable because the term Supply Corps did not replace "Pay Corps" (which had been established in 1871) until 1919. At that time, however, he apparently fulfilled all the qualifications of your query, so we'll have to say that Rear Admiral McGowan was the first admiral of the

Supply Corps.

After this, the question of date of rank should be relatively simple. Sam McGowan was appointed Paymaster General, Chief of the Bureau of Supplies and Accounts, with rank of rear admiral on 1 Jul 1914.

However, that was not his official date of rank. Our indefatigable lieutenant, who is a good man to have on your side in any argument, points out that the "Register of Commissioned and Warrant Officers of the U. S. Navy and Marine Corps" lists him as commander with date of rank of 11 May 1906; as captain, with date of rank of 23 Sep 1915; and as rear admiral with date of rank of 29 Aug 1916. So there you are.—Ed.

Chase Field and New Iberia

Sir: In your article "The Making of a Naval Aviator" you stated the student pilot "... is then transferred to NAAS Kingsville or NAS Corpus Christi, for

advanced training in jet aircraft." But you didn't mention either NAAS Chase Field Beeville, Texas, or NAAS New Iberia, La.—G. S. C., JO1, USN.

• *Thanks for reminding us. We'll clarify the matter right now.*

NAAS Chase Field is the older; the training of Navy pilots had been underway for one month before its June 1943 commissioning. The first briefing spaces were blackboards set up under the sunny Texas skies.

For the remainder of World War II, Navy pilots continued training at Chase Field. Shortly after the war, the air station was decommissioned.

Six years passed; the Korean conflict had been under way for a year. With new jet aircraft entering the Advanced Training Command (CNAVANTRA), NAS Corpus Christi had become overburdened. Chase Field was chosen as a practice-landing airstrip.

Lengthening one of the runways to accommodate the new jets, the Navy recommissioned Chase Field in June 1953. Four years later the air station was chosen as the place to start training in swept-wing jet aircraft.

NAAS New Iberia wasn't commissioned until 1960. During her relatively short existence, she has accumulated over 70,000 accident-free flight hours.

In addition, over 825 student naval aviators (including 110 allied students from Argentina, Brazil, Chile, Indonesia, Italy and Mexico) have completed this training.

For those unfamiliar with CNAVANTRA, student pilots reporting to one of the four air stations already have had nine months of basic flight training with one-half day of classroom work and the other half flying.

When the student completes the course, he is designated a Naval Aviator and ordered to duty with the Fleet.—Ed.

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DECORATIONS & CITATIONS

DISTINGUISHED SERVICE MEDAL

"For exceptionally meritorious service to the Government of the United States in a duty of great responsibility . . ."

★ RICKETTS, Claude V., ADM, USN, posthumously, for service as Vice Chief of Naval Operations from November 1961 to July 1964. ADM Ricketts displayed the finest sense of judgment, outstanding leadership, and a keen perception of the role of our Navy in international affairs. He was a leader in the development of the Multilateral Force concept, and pursued it with vigor, imagination, and tact. An initial result of his efforts is now evident in the mixed-manning demonstration being conducted by *uss Claude V. Ricketts*. ADM Ricketts was in the midst of all matters in which the Chief of Naval Operations was involved, both within the Navy and in joint matters. He was able to carry out these duties so ably because of his extensive background in all phases of naval operations—surface, subsurface, and air; and his equally great knowledge of international matters. His enlightened leadership, an outstanding example for all with whom he came in contact, was a source of inspiration to civilians and military alike.

LEGION OF MERIT

"For exceptionally meritorious conduct in the performance of outstanding service to the government of the United States . . ."

★ MARX, James H., CDR, SC, USN, for service from 2 Jan 1962 to 20 Apr 1964 while serving as Chief of the Emergency Supply Operations Center (ESOC), Supply Operations Directorate, Defense Supply Agency. During this period, CDR Marx displayed exceptional leadership and professional skill in the operation of the ESOC, and in the expeditious emergency logistical support of foreign governments, the armed services, and other federal agencies and organizations. His outstanding accomplishments, professional competence, and deep devotion to duty were in keeping with the highest traditions of the U. S. Naval Service.

★ SCHADE, Arnold F., RADM, USN, for service from December 1963 to June 1964 as Commander Middle East Force.



Admiral Claude V. Ricketts
Vice Chief of Naval Operations, 1961-1964

Exercising a high degree of leadership and resourcefulness, RADM Schade has been responsible for and has directly supervised the preparation and implementation of naval plans for exercises, contingencies, and the emergency evacuation of U. S. nationals from the Middle East, South Asia, and the east coast of Africa. During the period 26 November to about 6 Dec 1963, after complete planning and programing, he executed Operation Cho-Bahar, a joint U. S. Navy-Imperial Iranian Navy civic action project along the Gulf of Oman. His outstanding initiative in securing the cooperative efforts of Operation Handclasp, CARE, World Medical Research Foundation, and a University of Pennsylvania Medical team insured the successful completion of this humanitarian mission.

★ WALES, George H., RADM, USN, for service as Director, Pan American Affairs, Naval Missions and Advisory Groups Division, Office of the Chief of Naval Operations, from June 1963 to June 1964. Exercising a high degree of diplomatic skill and resourcefulness, and utilizing his broad knowledge of the Latin American people and their problems, RADM Wales has significantly furthered the objectives of the United States by his outstanding performance as Navy Delegate, Inter-American Defense Board, and as Navy Member, Joint Brazil-United States Defense Commission, Joint Mexican-United States Defense Commission, and the Permanent Joint Board on Defense, Canada-United States.

NAVY AND MARINE CORPS MEDAL

"For heroic conduct not involving actual conflict with an enemy . . ."

★ BRENNAN, William J., LTJG, USN, for heroism on the night of 1 Apr 1964 while serving on board *uss Holder* (DD 819), which was operating in a plane guard position astern *Randolph* (CVS 15) in waters approximately 270 miles southeast of Cape Henry, Va. Upon sighting a man who had been lost overboard from *Randolph*, and who appeared to be unconscious while floating in the heavy seas, LTJG Brennan immediately donned a lifesaving harness, dived overboard into the darkness and choppy waters, swam a distance of about 40 yards to the side of the victim, and managed to tow him back to *Holder*, where both men were hauled to safety.

★ PHILLIPS, Joseph H., SN, USN, for heroism during the hours of darkness on the early morning of 25 Oct 1963, while en route from the U. S. Naval Air Station, Moffett Field, Calif., to his new command, *uss Alfred A. Cunningham* (DD 752). Observing a burning vehicle along the side of the highway, and almost simultaneously noticing a man lying on the pavement in a pool of flaming gasoline, Phillips left his vehicle and immediately went to the aid of the unconscious victim. Although his efforts to remove the man from the burning fuel were momentarily thwarted when a sudden flash of flames erupted directly in his face, he continued in his rescue attempts until the victim was dragged to safety. By his prompt, courageous and determined efforts in the face of grave personal risk, Phillips undoubtedly saved the life of the unconscious man.

★ SAPANZA, Protacio B., SK2, USN, for heroism on the night of 28 Dec 1963 while serving at the U. S. Naval Air Station, Glynnco, Ga. Upon learning of a serious fire in a nearby residence, Sapanza rushed to the scene, forced his way into the flame- and smoke-ridden structure through a bedroom window and succeeded in rescuing a father and child, the former having been overcome by smoke while attempting to effect a rescue. By his outstanding courage, promptness, and perseverance in the face of grave personal risk, Sapanza was directly instrumental in preventing any loss of life in the fire.



SEALAB

High Living Below

ALL HANDS SPECIAL SUPPLEMENT

THE TERM "aquanaut" has been added to our 20th century space vocabulary. An aquanaut is a spaceman who goes down instead of up, in the medium of water rather than the vacuum of outer space. His work is as dangerous, his mission as important and his accumulated knowledge as useful as that of his astronaut counterpart.

This space term is appropriate because the underwater world has come to be known as inner space.

Our penetration of the three-dimensional underwater world is at the beginning—comparable to the situation in regard to outer space. The Navy is intensifying its efforts in inner space, and wants to make it possible for men to live and work deep underwater for extended periods of time.

Without adequate preparation, the work could be exceedingly dangerous. It is important to our nation's defense because the sea beds and their surroundings could represent a strategic element in warfare. It is important to the Navy's underseas rescue units, which must be prepared to cope with emergency situations in an age when many Navymen spend lengthy periods living beneath the sea in nuclear-powered submarines.

Aquanauts, like other spacemen, are challenged by unprecedented physical and psychological rigors. However, laboratory and pressure chamber experiments have demonstrated the feasibility of establishing a manned underwater station. This work was highlighted by an experiment, called Genesis I, conducted at the Naval Medical Research Laboratory, New London, Conn., in which three men lived 12 days in a chamber simulating the pressure at 200 feet underwater.

THE NAVY's first full-fledged aquanauts are four divers who recently spent 10 days living and working deep underwater as members of the Project Sealab I team, which conducted the first open sea phase of these long duration experiments in the Navy.

The original plan was for the men—LCDR Robert E. Thompson, MC, USN; Lester E. Anderson, GM1, USN; Robert A. Barth, QMC, USN; and Sanders W. Manning, HMC, USN—to remain submerged at 192 feet for three weeks, but after 10 days a tropical storm that threatened to become a hurricane forced them to surface.

The Sealab itself, which was lowered to the sea floor at a spot 26 miles off the coast of Bermuda, is constructed of three-quarter-inch steel, is 40 feet long and 10 feet in diameter. The lab and living space occupies 30 feet of the unit and the other 10 feet houses an electrical power transformer, gas manifold, and stowage areas for scuba gear and tools for underwater work.

The Sealab is equipped with electric lights, bunks, lavatory facilities, work bench, heaters, dehumidifiers, emergency water tanks, a fresh water shower, cooking facilities and a wide range of communication equipment plus a well equipped laboratory for physiological and marine biological studies.

It was lowered by filling two ballast bins, attached to its legs, with 72 tons of metal, then moored to its underwater position.

Nearby was the Navy oceanographic research tower Argus Island, a 260-foot-high structure that rises out of the Bermuda waters. This site was chosen because the ocean bottom is flat and visibility is good.

ON THE SURFACE, the large covered lighter YFNB-12 maintained a support post to supply electrical power, emergency gas, communications and fresh water. Except for these services the aquanauts maintained an autonomous existence.

An underwater "station," or combination work quarters and living accommodation on the ocean floor, could be of considerable importance in any work at great depths. With conventional diving methods, the greatest percentage of a diver's time in the water may be spent decompressing on the way up, allowing the gas absorbed by his body to be released gradually to avoid the bends. As a result, very little time is available for doing useful work.

The work of a diver who can live in an underwater base, with its atmosphere compressed to an amount equal to the water pressure outside, is quite different. He need decompress only once—when he finally surfaces after completing a job. Meanwhile, he can return to his underwater quarters after work each day, take a shower, cook his meals, read and relax and, after a good night's sleep and a hearty breakfast, return to the open sea to continue his work. Thus, he is not tied to a surface existence—he literally becomes a denizen of the deep.

While the aquanauts were free-swimming they used semi-closed-circuit scuba gear. The atmosphere in their quarters consisted of a helium, oxygen and nitrogen mixture under 86 pounds pressure per square inch. The men had no sensation of being under pressure.

Inside the lab the temperature was kept at 90 degrees—comfortable because of the increased heat conductivity of the artificial atmosphere. The only physical effect present to remind the diver they were in an alien environment was what is called the helium speech problem, which produces Donald Duck type speech.

THE SUCCESS with which Sealab I divers met while conducting this experiment is reflected somewhat in the daily reports from the surface support craft. They constitute a diary of the episode, which set the world's record as the longest time men have lived at such depth and under such pressure.

Tuesday, 21 Jul 1964

The four Navy aquanauts spent a quiet first evening in their underwater habitat. They had entered the Sealab for the first time late yesterday afternoon at 1735.

In the evening the aquanauts reported that, with the lights off, the interior of the Sealab is bathed in a soft blue light sufficient for reading and writing. However, they retired early last evening and they were asleep by 2115, except for the one team member who maintained the watch.

This morning at 0730 the aquanauts awakened and prepared their breakfast—consisting of corned beef on crackers washed down with hot coffee. At that time the team of aquanauts reported to the surface regarding their condition: "We are doing fine; it is nice and comfortable down here, and we could stay forever."

LCDR Roy Lanphear, USN, the project officer, made the following statement today at noon: "The Sealab has been on the bottom for 18 hours now. All atmospheric control and communication systems are in excellent order. The subjects are fine and in very good spirits."

After breakfast this morning, the team left their habitat for their first trip into the undersea world



EVENING WALK—Aquanaut 'walks' past undersea home.

SEA FOOD—Inside, 192' down, aquanauts enjoy meal.



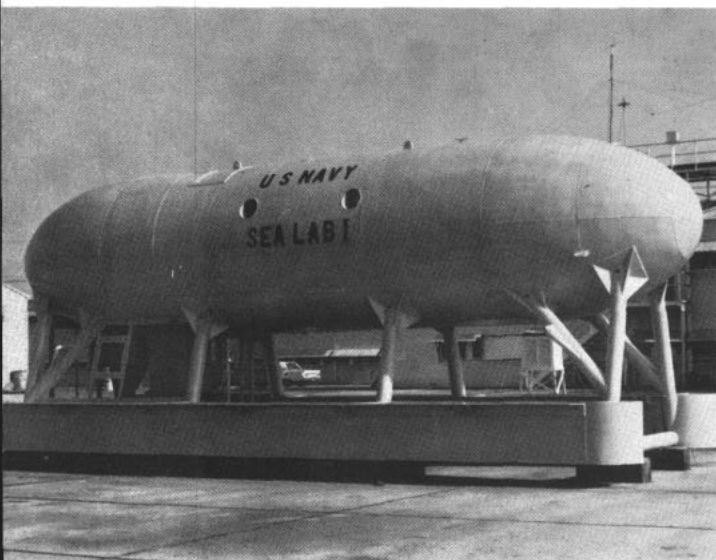


HOOK UP—Sealab divers adjust the lab's supply line.

around Sealab. They report the visibility on the ocean floor is 190 feet. For the most part, their work this morning was restricted to observation, general cleaning-up inside the Sealab and marine biological studies. They are making sorties of short duration in the vicinity of the Argus Island base.

In their observation of marine life the team of aquanauts have already established a friendship with several

GROUNDING—Navy's Sealab waits for a ride out to sea.



large groupers. They will attempt to feed those fish late this afternoon.

The aquanauts are having a discussion as to whether it would be better to have tacos, tortillas or tamales for lunch.

Wednesday 22 Jul 1964

The four aquanauts in the second day of Project Sealab are in very good spirits. They have completed their physiological and psychological orientation period for the day.

CAPT George F. Bond, MC, USN, senior medical officer, and CAPT Walter F. Mazzone, MSC, USN, technical project officer, report that they completed extensive medical examinations of the aquanauts last night before the divers retired.

This morning the aquanauts made several 45-minute sorties, completing a period of general orientation around the Sealab site. The aquanauts have become quite at home in the Sealab, even to the extent of becoming acquainted with the undersea creatures. Two large groupers have become very friendly and are easily distinguishable. One is a grey velvet color and has been named Wally; the other, with a black fin and tail, has been named George.

This afternoon the aquanauts will continue their observations of marine life and also begin their scheduled work program.

It is planned today that a working party of several divers will imbed ultrasonic beacons in the ocean floor. These beacons will be used by the aquanauts as direction finders.

Thursday 23 Jul 1964

After a good night's sleep, Aquanauts Anderson, Barth, Manning and Thompson awoke this morning at 0830 and had Mexican food for breakfast. After breakfast the team set about drawing blood samples and recording other physiological data.

Lunch today in the Sealab was served at 1230, after which aquanauts took a one-hour nap. It was noted by CAPT Bond that the Sealab crew becomes very sleepy after meals. After the siesta, the aquanauts began the afternoon routine. A sortie from the undersea habitat is just beginning.

Late yesterday afternoon the aquanauts looked toward the surface and noted that all their usual neighbors in the fish community were in a frantic dive down to the Sealab. The reason was clearly evident when two 10-foot-long sharks appeared. The sharks thoroughly upset the tranquility around Sealab during their five-minute visit. Once departed, the sharks did not return.

A trolley car service, similar to a dumbwaiter affair, has now been established from the surface to the Sealab for use in rapid transfer of material. This eliminates the necessity of sending a diver-messenger to perform a routine task.

When the afternoon sortie is completed, about 1600, the aquanauts will return to the Sealab, record their body temperatures and take hot showers. An early evening meal is planned, with a one-hour rest period immediately afterward. After more psychological and physiological testing, the aquanauts should retire about 2100.

Dr. Bond noted that "The aquanauts are responding typically to the conditions under which they are living. They move slower than normal and they do not like

to be rushed. It seems as if they are making every effort to conserve their energy."

Friday 24 Jul 1964

This morning the aquanauts were awakened at 0900. Aquanaut Anderson had a hearty breakfast of hot chocolate, tomato soup and crackers; the other Sealab members were content with hot chocolate and coffee.

At 0930 Aquanaut Barth was operating a portable underwater television camera. He sent the following message topside over the electro-writer communications system: "Tell the boys in the mess deck to turn on their TV. I will give them a tour outside."

Blood samples were taken at 1000 and shortly afterward the aquanauts began preparing for the morning sortie, which was confined to the near vicinity of the Sealab. Wally, the grouper, came by at 1045 for his morning handout. Wally is very fond of sardines.

An afternoon sortie is planned to the northeast of Sealab. It will be an exploring expedition and will take the aquanauts about 75 yards from their habitat.

Saturday 25 Jul 1964

Last night was a late one for the aquanauts. They were involved in making motion pictures and conducting long technical discussions with topside personnel. They did not retire until 2300.

All conditions were completely normal this morning when the aquanauts awoke at 0900. They all slept well, and during the night the watch standers were able to make good observations of the marine life around the Sealab.

Early this morning the physical examinations and physiological testing were completed. Afterwards, Aquanaut Barth made a sortie of 75 minutes to feed the fish. He carried an underwater television camera so that topside personnel on *YFNB 12* could watch the show on their monitor. Kinescope recordings were made of the entire process.

After lunch and a one-hour nap the aquanauts will make their afternoon sortie. Today they plan to implant some Secchi-discs which are oceanographic devices used to measure underwater visibility.

Yesterday the aquanauts installed a current meter on the ocean bottom, which took them 30 minutes. In addition, they have been assisting photographers who are diving to make a pictorial record of the Sealab operation.

Tonight the aquanauts will rig large spotlights around and above Sealab to help illuminate the undersea habitat for night-time photography.

Yesterday the aquanauts received two surprises in the way of food—fresh watermelon and homemade chocolate fudge.

When asked about the general physical condition of the aquanauts, CAPT Mazzone reported: "All results of the physiological testing demonstrate no significant changes from those normally expected."

Sunday 26 Jul 1964

As of this time, the U. S. Navy four-man aquanaut team has been living on the ocean bottom for 144 hours. An early morning conversation with Aquanaut Thompson indicated that all conditions were normal. The other aquanauts were still asleep when this conversation between the Sealab and operations control took place at 0700. Aquanaut Thompson, the medical officer, had



ON THE JOB—Biological samples are part of the work.

the early morning watch and decided to prepare breakfast. He took care not to awaken his team members as he prepared corned-beef hash on toast with a steaming cup of hot chocolate.

After breakfast, Thompson continued his conversation with the Sealab operational control on the surface. He spoke of trying to catch a trumpet fish and how elusive they are. Apparently the trumpet fish will allow you to believe that you have captured him; then, just as your grip tightens, he scoots away. Also, he told of lowering the thermometer down into the water to record the temperature outside the Sealab. As he did so the groupers, who are now steady companions of the aquanauts, mistook it for a handout of sardines and made strikes at it.

Today was the first Sunday for the men in the Sealab.

AT HOME—Aquanauts relax and compile research data.





DOWN SHE GOES—Sealab is towed past Argus Island and lowered to ocean floor in clear water off Bermuda.

After the other team members awoke and had breakfast, the underwater habitat became an underwater chapel. At 1030 Aquanaut Thompson announced to operational control that church services were beginning. After a moment of silent prayer, Dr. Thompson led the other aquanauts in an open prayer expressing their thankfulness to God for watching over them, for the friends that they have made of the underseas creatures, and asked that "The Lord take care of those who take care of us." The service was concluded with the singing of "Onward Christian Soldiers," accompanied by Aquanaut Thompson on the harmonica.

Later, while the aquanauts were having lunch, march music including "The Stars and Stripes Forever" was broadcast into the Sealab. They all enjoyed the short interlude, especially Aquanaut Anderson, who immediately began waving his arms as a conductor in tempo with the music.

Even with the rolling seas, which were heavier than those of the past few days, Sunday—both topside and in the Sealab on the ocean bottom—was bright, sunny and peaceful.

Monday 27 Jul 1964

At 1735 the Navy four-man aquanaut team will mark their first week of residence in Sealab I at a depth of 192 feet. It has been a highly successful seven days, and it represents the longest period of time man has remained submerged, at this depth, under similar conditions. The aquanauts remain cheerful and content in their surroundings.

Yesterday afternoon was devoted to minor house-

keeping chores and the daily physiological testing. Several brief sorties were made in the vicinity of the Sealab, mainly for photographic purposes. Otherwise, the aquanauts spent a quiet Sunday afternoon and evening. Dinner last night consisted of spanish rice, tamales, tomatoes, chili and beans. Fresh watermelon was sent down from the surface for dessert.

This morning, Aquanaut Manning had the early watch while the other team members slept. Manning reported: "I feel very well. Everything is going fine. I slept well last night. As a matter of fact, I always sleep well." CAPT Bond and Aquanaut Manning had a long conversation this morning concerning weather and sea conditions. They also discussed today's operations and logistic requirements.

The aquanauts will make visual observations and take photographs of the experimental one-man submarine, *Star 1*, while the craft undergoes a test dive this morning.

Tuesday 28 Jul 1964

At this time Project Sealab I enters its eighth day of operations and all systems are functioning in good order. Today the principal investigator, CAPT Bond, was preparing the four Navy aquanauts to begin a series of shark experiments.

The shark experiments were arranged by Dr. Bond in cooperation with the University of Miami. The aquanauts, working with the university scientists topside, will use a system of colored lights and acoustic devices for the experiment. The Sealab project offers an excellent opportunity for the study of shark behavior. It offers the scientists an opportunity to study the sharks at close quarters, in their natural habitat, and to make a photographic record of the study.

Yesterday's program completed the successful testing of the experimental one-man submarine, *Star 1*. That evening the aquanauts held a gala celebration in honor of the experiment and in honor of their first week at the bottom of the sea.

However, there is little time for rest and relaxation for the aquanauts. This morning the men concluded a battery of medical tests to determine their condition after a week of living under the intense pressure of great depth. To all indications their health and spirits are excellent.

This afternoon, in spite of the rainy surface weather, the aquanauts will install the electronic equipment to be used in the shark experiment. If time permits, they will install a telephone system linking their Sealab with shore-based systems.

Wednesday 29 Jul 1964

The accomplishments of the aquanauts thus far have been remarkable. Their physical condition and morale continue to be excellent.

Late yesterday afternoon a short-wave radio was installed in the Sealab and a marine band linkage was established through Washington, D. C., which enabled the aquanauts to talk to people in the United States. The first contact was with a ham operator in Savannah, Ga. The gentleman in Savannah found it difficult to believe the transmission he was receiving came from a station 192 feet beneath the surface of the ocean. After the initial contact the aquanauts spoke with other ham operators in Ohio and South Carolina.

Today at 1130 the aquanauts held a radio conversa-

tion with Rear Admiral John K. Leydon, USN, Chief of Naval Research in Washington. Admiral Leydon offered his congratulations to each of the aquanauts for the progress they had made thus far and wished them well during the remainder of their underwater operation.

The aquanauts made extensive sorties outside the Sealab yesterday afternoon, mainly in connection with the installation of acoustic devices and the colored light system which were used in the shark attraction experiment. The underwater television camera was positioned at a vantage point so any sharks coming into the area could be observed on the surface. The shark attraction system was turned on last night for several hours but no sharks appeared. Today the system will be reactivated in an attempt to attract sharks and induce them into a state of feeding frenzy.

The aquanauts will be free from danger as they observe the action through the porthole in the Sealab or from the heavily screened-in portion under the habitat called the back porch.

Thursday 30 Jul 1964

Yesterday afternoon the four-man team of aquanauts began their return trip to the surface. Anticipating bad weather at the site during the next 24 hours, the operational commander, LCDR Lanphear, made the decision to bring them up.

The slow process of decompression could take as long as 96 hours. By midnight tonight the Sealab and her crew should reach the 100-foot level and by noon tomorrow they should be at 60 feet.

All systems in the Sealab are working in perfect order. The progress during the upward journey is being monitored by underwater television cameras both inside and outside the lab.

This morning the Governor of Bermuda, Lord Mar-tonmere, paid a visit to the site. He visited aboard YFNB 12 and the Argus Island tower, and received a briefing on the operation.

At 1440 today the submersible decompression chamber with the four Navy aquanauts inside was raised to the cargo deck of Argus Island; the aquanauts are in excellent condition. Tomorrow morning the chamber will be opened and the aquanauts will once again breathe fresh air and return to a world perhaps a little unfamiliar to them after their 10-day underwater experience.

THE ASCENT which began the afternoon of 30 July did not follow the original planned procedure—which was for the aquanauts to remain in the Sealab until they reached the 15-foot level. Due to heavy seas the aquanauts transferred from Sealab to a submersible decompression chamber at the 81-foot level, from where they were hauled out of the sea by Argus Island's crane. They completed their decompression time high and dry after spending 36 hours in the process.

Not mentioned in the released daily report was an incident resulting in near-tragedy for Aquanaut Sanders Manning. While photographing the experiments of *Star 1* on the fifth day, Manning's breathing apparatus stopped operating properly.

He began making his way back to the lab but blacked out before he reached the entrance. Aquanaut Anderson, maintaining the watch inside, heard a thud as Manning was washed against the side of the lab.



WATER WORK—Sealab diver secures the entrance hatch.

He investigated and, finding Manning, he pulled him into the lab and revived him. Except for badly blood-shot eyes caused by the lack of oxygen, Manning was in good shape.

Vast amounts of physiological and technological data have been systematically accumulated during project Sealab I. This information itself makes the project a success, not considering that all records were broken for living and working within the sea at great depths.

Project Sealab I has shown man's potential for conquering inner space, but it is only a beginning. In the future greater depths, longer duration, and increased work loads will be programmed.

ON THE BOTTOM—Aquanaut enters back porch of lab.



TAFFRAIL TALK

LIKE LINEMEN on a football team, some members of a magazine staff perform the most essential work while gaining little recognition for their labors. Able T. Register—we call him Bud—who joined ALL HANDS as a JO2, falls into this category.

During his stint here Bud performed invaluable service to our layout department. He was, like the lineman, sometimes brilliant, sometimes inspiring, and always dependable. Between pica counts and paste-ups Bud managed, among other things, to prepare several by-lined articles and make chief journalist. As he departs for a tour with the submarine service in New London, Conn., we reflect that Chief Register's greatest asset is that he is Able—in more ways than one.

Picking up where Bud left off is another staff newcomer, Kelly Gilbert, JO2, who learned his journalism at Iowa University—near his home at Des Moines—and gained most of his three-year Navy journalism experience on staff duty at COMCRUDESPEC, San Diego. Kelly is a sports-minded mid-westerner who can spin a yarn, run a TV camera, write a radio program, edit a newspaper or do just about anything else you ask of him.

★ ★ ★

In the way of passing on some useful information, we have condensed a message by CAPT Whitney Wright, usn, CO of uss *Midway* (CVA 41), addressed to his crew. It is self-explanatory:

It's easy to figure out things you don't like about the Navy because for some reason, it is easier to complain than praise, gripe than cheer and dislike rather than like. But if you first analyze what you *like* you may develop a different outlook.

What is there to like? There are as many answers to this as there are Navymen. To name a few, I myself like the bunch of guys I work with; I like flying; I like seeing different parts of the world; I like my job—which has a meaning; I find the Navy is more all-around fun than my previous job on the outside: I like the sea; and I like the excitement.

Now, what do you like? If you say you don't like anything about the Navy, then chances are you won't like anything about civilian life either. If you find it easier to approach the question from the negative side, then let's examine for a moment:

You don't like the pay? Remember, if you make Chief by the time your 20 is up you have a pension worth upwards of \$65,000 or more.

You want to get out to finish your education? The Navy offers all kinds of opportunities to get high school diplomas, college degrees and postgraduate degrees—it is simply up to you to take advantage of what's offered.

You don't like being captain of the head for three months? There are worse jobs on the outside, but menial tasks can be stepping stones to greater things for people with ambition.

Your girl friend doesn't like the Navy? There are lots of girls—shop around (provided you are still single) if that is the *only* fault you find.

You think advancement is too slow? Not if you study and beat the other guy.

You don't like dehydrated cabbage? Don't take any on the mess line.

You don't like your CO? Stick around. The turnover rate of skippers is greater than the enlisted turnover.

We think the captain has a good point.

The All Hands Staff

The United States Navy

Guardian of our Country

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends. The United States Navy exists to make it so.

We Serve with Honor

Tradition, valor and victory are the Navy's heritage from the past. To these may be added dedication, discipline and vigilance as the watchwords of the present and future. At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families. Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

The Future of the Navy

The Navy will always employ new weapons, new techniques and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war. Mobility, surprise, dispersal and offensive power are the keystones of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

ALL HANDS The Bureau of Naval Personnel Career Publication, solicits interesting story material and photographs from individuals, ships, stations, squadrons and other sources. All material received is carefully considered for publication.

Here are a few suggestions for preparing and submitting material:

There's a good story in every job that's being performed, whether it's on a nuclear carrier, a tugboat, in the submarine service or in the Seabees. The man on the scene is best qualified to tell what's going on in his outfit. Stories about routine day-to-day jobs are probably most interesting to the rest of the Fleet. This is the only way everyone can get a look at all the different parts of the Navy.

Research helps make a good story better. By talking with people who are closely related to the subject material a writer is able to collect many additional details which add interest and understanding to a story.

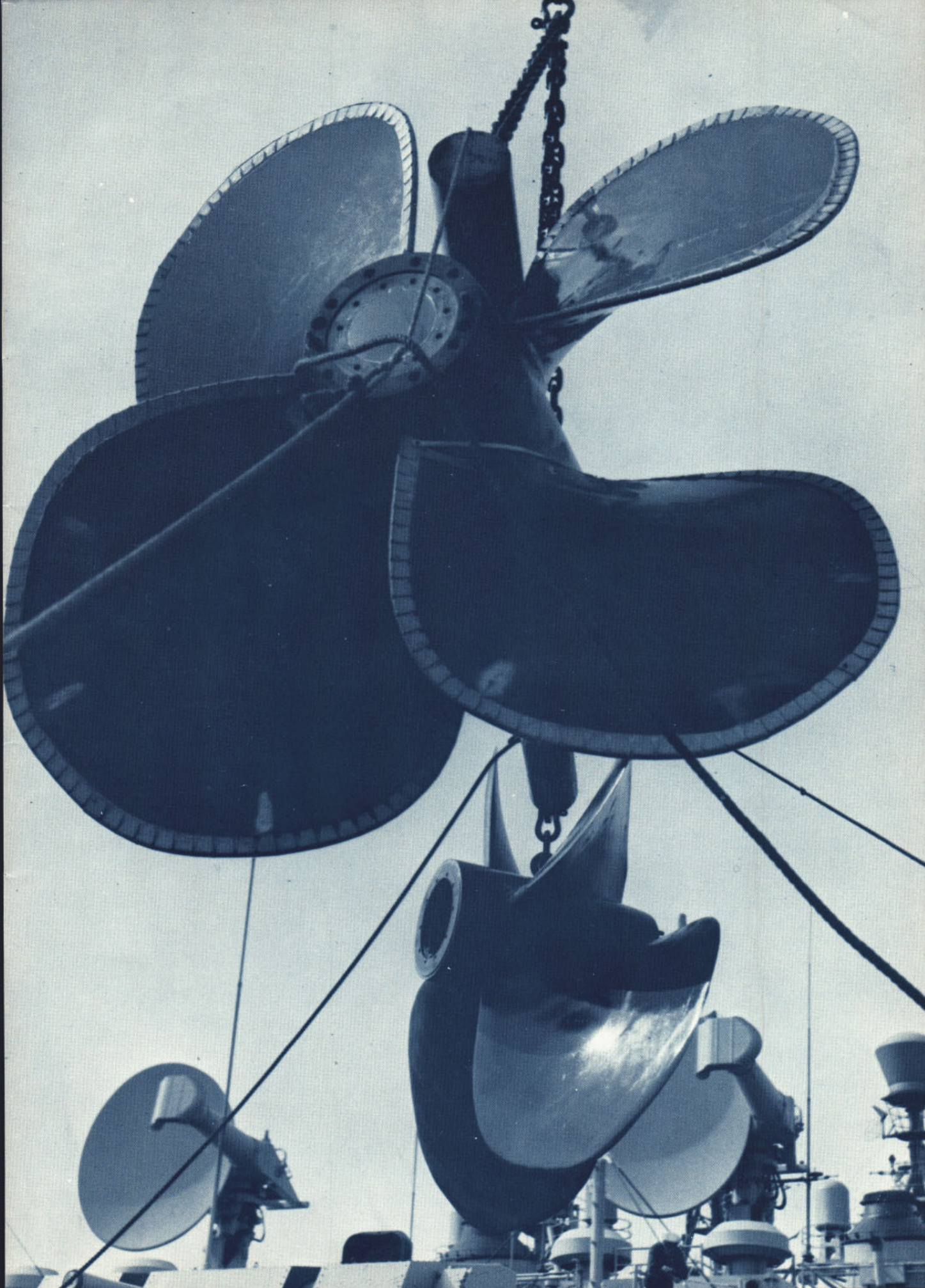
Articles about new types of unclassified equipment, research projects, all types of Navy assignments and duties, academic and historical subjects, personnel on liberty or during leisure hours, and humorous and interesting feature subjects are all of interest.

Photographs are very important, and should accompany the articles if possible. However, a good story should never be held back for lack of photographs. ALL HANDS prefers clear, well-identified, 8-by-10 glossy prints, but is not restricted to use of this type. All persons in the photographs should be dressed smartly and correctly when in uniform, and be identified by full name and rate or rank when possible. Location and general descriptive information and the name of the photographer should also be given. Photographers should strive for originality, and take action pictures rather than group shots.

ALL HANDS does not use poems (except New Year's day logs), songs, stories on change of command, or editorial type articles. The writer's name and rate or rank should be included on an article. Material timed for a certain date or event must be received before the first day of the month preceding the month of intended publication.

Address material to Editor, ALL HANDS, 1809 Arlington Annex, Navy Department, Washington, D.C. 20370.

● **AT RIGHT: STERN BUSINESS**—Pro-pellers swing high as Atlantic Fleet destroyer tender USS *Yellowstone* (AD 27) goes about the business of changing screws on one of her brood in port at Mayport, Florida.





- TO EXPLORING ATHENS, HONG KONG OR SAN JUAN WITH THE SKILL OF A WORLD TRAVELER (For more interesting shore leave, check with Clark, *All the Best in the Mediterranean*, Olsen's *Orient Guide* or Fodor's *Guide to the Caribbean*)
- TO MAKING THE MOST OF A GOOD HAND—OR A MEDIOCRE ONE (There's good advice in Roddy, *Friday Night Poker*, but first double check the odds in Adler, *Probability and Statistics for Everyman*)
- TO FINDING OUT WHAT MAKES YOU AND OTHERS TICK (For a look at 20th Century man, study Berelson's, *Human Behavior*)
- TO DISCOVERING THE WONDERS OF THE DEEP (Submerge with Cousteau, *Living Sea* or Idyll's *Abyss: Deep Sea and Creatures Who Live in It*)
- TO SPEAKING THE LANGUAGE ALMOST LIKE A NATIVE, IN ANY PORT (Learn from Pei, *Talking Your Way around the World*, and the "Getting Along" language series)
- TO TAKING A TURN AT BAT WITH A MAJOR LEAGUER (Out to the ball game in Stan Musial's *The Man's Own Story* or *Pennant Race* by Jim Brosnan)
- TO UNDERSTANDING THE TRADITIONS OF THE NAVY (Take Pride in the reports of Merrill, *Quarter Deck* and *Fo'c's'le*, or Morison *Two Ocean War*)

READING IS THE KEY TO ALL THIS AND A LOT MORE.



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